

JANUARY 1979

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Mamiya M645

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ON the SCENE the EDITORS

NEW HORIZONS

We're ringing in the New Year with a bevy of ideas for better picture making. This month's features include suggestions for improving your technique and polishing your style; plans for constructing and using helpful devices; news on the latest equipment, techniques and activities unique to our fast-growing field; and, of course, countless photographs. . . .

Technical Editor **Mike Stensvold** and Associate Editor **Bill Hurter** team up this month to launch the first of a series of articles on "Basic 35mm Photography." In "Camera Handling," PhotoGraphic's ace photo whizzes collaborate to answer some of the practical questions most instruction manuals ignore. . . .

In "Twelve Tips for Better Portraits," photographer **Charles Gatewood** shares his tried-and-true techniques for establishing rapport with friends, family and even total strangers in order to make the most revealing portraits. . . .

And speaking of light, **Mike Stensvold's** exploring the subject in one of its many facets in this issue. "Understanding the Gray Card" is presented as a simple guide for those of us who've always been confused about exactly how the scale of tonal gradations can be used to improve photographic renditions. Stensvold explains the pragmatic uses for this important tool once and for all. . . .

Robert S. Marks provides a step-by-step method for reproducing photographic images onto almost any surface in his excellent "Photographic Silk-Screening" article. Illustrated with Marks' own colorful nonsilver images, the piece shows how any photographer who can make a high-contrast print can translate an original photograph into a silk-screen print that's a perfect reproduction or a very stylized interpretation of the original image. . . .

This month's "Blueprint," by **Karen Donelson**, details a simple process for making personalized business cards to illustrate your work or promote your images in style. . . .

Internationally known press photographer **David McEnery's** work is showcased in our portfolio section. McEnery's ironic humour pervades his delightful glimpses of the human comedy. Using only the simplest of camera equipment and techniques, McEnery concentrates on picture content rather than mechanics. His quick reflexes and wry wit combine to make a recognizable and highly entertaining style. . . .

Want to locate a particular article, follow the ramblings of a favorite columnist, or track down stories on an interesting technique or piece of equipment you've been meaning to try? Our "1978 Yearly Index" lists issues and page numbers for all the features, departments and special sections run last year. This handy index, along with a collection of 1978 issues, may be worth its weight in gold some day when you're in the midst of experimenting with a new technique and you can't remember what to do next—so hold on to it! . . .

COMING NEXT MONTH:

DOUBLE EXPOSURES—The lazy photographer's guide.

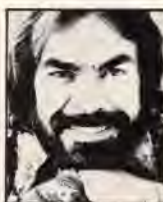
HOW TO WRITE A MOVIE SCRIPT—To get the most from each shot.

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HURTER



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This month's cover photograph isn't really a photograph, but derived from one. It's a silk-screen print, or serigraph, that began as a continuous-tone black-and-white photograph from which tone-line and tone-separation litho positives were made and

then transferred to sensitized, emulsion-coated stencil film to provide a blocking medium for the silk screens, through which paint was applied onto unsensitized paper. In this print two different tone-line litho positives and three different tone separations were used with some opaquing on the positives and selective blocking on the screens. To learn more about this process, turn to page 62.

ONGOING TRADITION

It has become a tradition with the January issue of this magazine to remind ourselves and our readers of our purpose: to help others take better photographs and gain more enjoyment from photography. One of the most important ways we do this is by allowing readers with story ideas others might find useful to have a platform here to share those ideas.

Many of the articles that appear in PhotoGraphic Magazine are contributed by readers. We reaffirm this tradition and the fact that we actively solicit your contributions. If you're interested, or if you have a portfolio you think we should consider, we'll happily send a copy of our "Writer's and Photographer's Guide," which details our needs and requirements and tells you how to proceed. Simply send a stamped, self-addressed envelope with your request.

GALLERY CONTRIBUTIONS

Readers are invited to share their best photos in our "Gallery '79," and many do. We receive much excellent and exciting work. We would like to remind readers who send Gallery contributions that textured-finish, machine prints (sometimes called "satin" finish) are not acceptable. They do a great job of covering fingerprints as you pass around snapshots of your summer vacation, but are useless for magazine reproduction. Glossy prints are welcome as are instant prints. If you send transparencies, we prefer to have them with the protection of plastic slide-viewing pages. It makes handling much easier for us. Please be sure to heed the instructions to put your name on each piece of photo material sent to us—slides included. Also, be sure to include all technical information: camera, lens, film and exposure information, filters, processes, developers, etc. Finally, include a stamped, self-addressed envelope—not loose stamps or envelopes with no return address nor packing material too large to fit—we are truly concerned about the safe return of your material, but you must do your part in protecting your work.

PHOTOGRAPHIC'S \$30,000 SUPER SWEEPSTAKES

This month begins our Super Sweepstakes. We're offering you a chance to win one of 139 prizes each month for six months. You'll find complete information on page 41. Enter, tell your friends and good luck!

NEW ON-SALE DATE

Also beginning this with issue, Petersen's PhotoGraphic Magazine will be on sale at your local newsstand around the first of each month. This marks a change and we know you won't want to miss a single issue.



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□ Light—it defines everything. Without it, we could not take pictures; not only would our light-sensitive materials be useless, there would be nothing, no images at all, to see. All-pervasive blackness would probably be the only world. It was not, I think, by accident God created light first and deemed it good.

Somewhere between the poetic prose and practicality, it becomes important that we comprehend a little of the physics of light, how it behaves and its language, so we can learn and read about it with understanding and then deal with its properties effectively in our photography.

A couple of weeks ago I read through the instruction manual of a new light meter. The legend under Table IV said, "Multiply foot-candles by 10.8 to convert to lux," and "Multiply foot-lamberts by 3.43 to convert to nits." I was in trouble. At one time I knew what a foot-candle was and what a foot-lambert was, but a lux or a nit? I'm sure I'd never heard those words in a similar context. It was time again for intensive "R and R"—research and refresh, that is. Otherwise, that very precise manual was going to be a bit vague in my mind.

Light, that radiant energy of which we humans are aware by the stimulation of our eyes, comprises only a small part of the electromagnetic spectrum. Infrared radiation and radio waves fall outside of it on one side, and ultraviolet, X-rays and gamma rays are beyond its perimeters on the other end. Each of these is distinguished by wavelength.

Wavelength simply means the distance between corresponding points on two successive waves—the distance from one wave crest to the next wave crest, for example. Radio and infrared rays have much longer wavelengths than light, and ultraviolet and X-rays have shorter wavelengths. Only wavelengths that the human eye can perceive can correctly be called light. For this reason, "light" is a totally incorrect term when applied to infrared radiation. The visible spectrum extends from around 400 *nanometers* (nm)—violet light—to 700 nm—red light. A nanometer is one millionth of a millimeter. *Angstrom* is also a unit of wavelength measurement; it equals one ten-millionth of a millimeter and bears the name of a Swedish physicist. Nanometer is the more widely used term today.

Heat generates light. Objects above 1000° centigrade glow. In a light bulb, for example, electrical current is used to heat a metal coil or filament, which in turn generates light. The word *incandescent* means

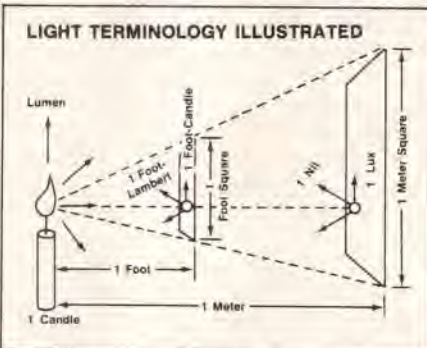
TOOLS OF the TRADE

KAREN SUE GELLER

THE LANGUAGE OF LIGHT

"hot enough to glow with light."

Among the various principles of light that must concern the photographer is intensity or brightness. In physical terms, intensity is a function of the height of the wave crests. The quantity or intensity of light affects the photographer both in shooting and printing his/her negatives. Quality of light, color (determined by wavelength), its interaction with objects, and the angle of light cast on the subject are the other aspects of light that affect the photographer.



A light by any other name?? See text for simplified definitions.

For this discussion, we'll limit ourselves to quantitative values only.

Concerning light intensity, these are the concepts of particular interest to us in photography: 1. Power of the light source, 2. intensity of light falling on the subject, and 3. intensity of light reflected from a subject. We shall proceed in that order.

INTENSITY OF LIGHT SOURCE

Light radiates in all directions from its point of origin. *Candle-power* refers to the amount of light emitted in all directions from a light source. *Luminous intensity* is the preferred description today. The international standard of light emission was originally based on a specific wax candle burning under specific conditions. The "international candle" was the unit of candle-power.

The *candela* is the current standard international unit of light emission, and is commonly referred to as the *candle*. The unit is based on the luminance of a perfectly radiating body, which, at the melting point of platinum, is 60 candelas per square centimeter.

The amount of light produced by a one-candle light source on a one-square-foot area at a distance of

one foot is termed a *lumen*. The efficiency of light sources is expressed in *lumens per watt*. A normal 100-watt incandescent lamp, for example, has an efficiency of around 15 lumens per watt—only seven percent of the energy is obtained as light while 93 percent is lost as heat. A photoflood's efficiency is about a third (30-percent) higher.

INTENSITY OF LIGHT ON A SUBJECT

The name given to light that has left its source but has not yet interacted with an object is *incident* light. This is where the incident-light meter derives its name, and what we measure at the subject position. When a one-candle source of light strikes a one-square-foot-of-surface area one foot away, we say that is an illumination of one *foot-candle*. This term is giving way in some parts of the world to "lumens per square foot." *Lux* is a lumen that strikes a one-square-meter area one meter away from a one-candle source. Note that foot-candle, lumen per square foot and lux all have one lumen of intensity in common. The lux area will, however, appear less bright because the one lumen is spread over a much larger area.

INTENSITY OF REFLECTED LIGHT

Due to the many influences present, reflected light is very different from incident light. Surface brightness or *luminance* not only depends on the intensity of light (*illumination*) present, but also on the reflection power of the surface—color (red, blue, green), degree of *reflectance* (black, gray, white), surface characteristics (shiny, smooth, rough), and the degree of transparency (transparent, translucent, opaque) all have a direct bearing on luminance. Reflected light has its own terminology but you will recognize the similarities. The international unit of luminance is the *nit*, a reflected light intensity of one candle per square meter. In the U.S.A., however, the common term is *foot-lambert*, defined as "a uniform diffuser emitting one lumen per square foot."

If you are interested in a more complete discussion of light as it affects the photographer, I recommend the book *Photography* by Charles Swedlund, published by Holt, Rinehart and Winston, 1974. His chapter on light will be of special interest, and the volume will be valuable general reference. Now, for me it's back to the reading of that manual. Next month we can address the practicalities and application of light measuring with the "light" of knowledge on our side. □



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It's safe to say that most information among nonprofessional photographers, whether it is of events or new darkroom techniques, is disseminated by word of mouth. Indeed, an important function of camera clubs is to be a center of communication for members. However, in order to keep a constant flow of new information and knowledge into the club, members have to continuously seek out new sources of information and stay in touch with the photographic community.

One way to do this is to augment your club library by subscribing to photographic publications. Major metropolitan libraries carry photo magazines from around the world; and in the reference section you can find complete listings of periodicals in *Magazines for Libraries*, by William Katz, and *Ulrich's International Periodicals Directory*, both published by R. R. Bowker Publishing Company.

In addition to the wide variety of photographic publications available, there are many photo services and organizations that ought to be of great interest to one or another of your club members, from the mad darkroom chemists to the avant-garde aesthetes. The following list is by no means complete; it is intended rather to be a starting point.

Associated Photographers International was founded on the premise that photographers don't have to be established professionals to make money with their pictures. The roughly 8000 members receive a newsletter, *AP Idea*, 11 times a year, which contains detailed instruction for shooting a variety of subjects, marketing ideas, and moneymaking advice that carries a two-month money-back guarantee to new members. Some of the other membership benefits include being listed in the worldwide free-lance registry, a free-lance rate schedule, a pricing/promoting guide, and substantial discounts on photo magazines, books and equipment. The membership fee for one year is \$15. For more information write Associated Photographers International, Box 206, Woodland Hills, California 91365.

Camerawork is a nonprofit center for photography that houses exhibits, workshops and lectures. In addition to the newsletter, which appears approximately six times a year, Camerawork members receive a discount on all books, show catalogs, workshops and lectures; reduced fees for all open-exhibit portfolio reviews; and advance notice of auctions, gallery exhibits and other events. The membership fee is \$18 for one year; write Camerawork at 70 12th Street, San

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PUBLICATIONS AND SERVICES

Francisco, California 94103, for information and a sample newsletter.

Color darkroom enthusiasts with an insatiable appetite for mixing their own solutions for color film and print processing can sink their teeth into *Dignan Photographic Reports* 12 times a year. The newsletter is packed with official and substitute formulas for film and paper processing; the latest improvements on existing formulas and processing techniques; and up-to-the-minute infor-



These publications are just a few of the many available to photographers of varying interests.

mation on color films, darkroom equipment, and other topics of concern to color darkroom workers. Also available from Dignan are chemical kits and books containing black-and-white and color processing formulas. *Dignan Reports* costs \$24 yearly; write Dignan Photographic, Inc., 12304 Erwin Street, North Hollywood, California 91607.

Kellner's Moneygram not only contains a large section of photo market listings for free-lancers but numerous articles by photo-marketing experts. The ten-page newsletter is published 11 times yearly and obtains its listings from magazine and book photo editors, stock agencies, and other

photo buyers around the country. The one-year subscription rate is \$20. The *Moneygram* as well as a free-lancing book are published by Kellner's Photo Services, 1768 Rockville Drive, Baldwin, New York 11510.

The Paterson Darkroom Club provides its members with an eight-page quarterly newsletter containing darkroom techniques, new product news and classified ads; a ten-percent refund on all store-bought Paterson products and Agfa-Gevaert enlarging paper; a darkroom how-to book; a set of blueprints for assembling or enlarging a darkroom plus other darkroom aids; and a print-critiquing service. Membership costs \$5 for one year; write the Paterson Darkroom Club, P.O. Box 3575, Maple Plain, Minnesota 55348.

Black-and-white darkroom workers who have in the past been frustrated by the unavailability of rare yet essential chemicals need look no further than Photographers' Formulary. PF will supply virtually any formula for black-and-white work on request plus exact quantities of chemicals (chemicals are sold dry, in any amount, by the gram). PF also stocks a line of inexpensive, practical lab aids. For further information write The Photographers' Formulary, Inc., P.O. Box 5105, Missoula, Montana 59806.

Club members interested in keeping up with photo competitions on every level might want to look into *Photo Insight*, which provides 12 pages of international photo contest listings and advice to entrants six times a year. Listings contain entry blanks, complete rules and award information. A one-year subscription costs \$15; write *Photo Insight*, Suite 2, 169-15 Jamaica Avenue, Jamaica, New York 11432.

The foregoing services and publications are just a few of the many available and of potential interest to camera club members. Therefore, if you know of any that aren't mentioned here, please let me know. I am also interested in hearing about any topics you would like to see covered in this column. It can be a clearinghouse for ideas and information that will enrich your camera club experience if you help make it so. □

Camera clubs please note: "Contest News" can be found on page 94.

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☐ Pressure is the name of the game when attempting to break into the ranks of the professional. For years it has been commonly accepted that the major difference between an amateur and a pro is that the pro is paid for his or her work, the amateur isn't. This statement is quite inaccurate, to say the least, for there are many nonpros who receive payment for the photographs they produce whether they were engaged to take them or not.

In defining the difference between an amateur and a pro it should be taken into account that professionals work under the stress and pressures of time and deadlines, whereas most amateurs shoot for their own enjoyment and at their own leisure.

Certainly this is not intended to demean the amateur, for it is from the ranks of amateur photographers that professionals spring forth. In addition, I have seen much nonpro work that has been worthy of the highest praise and recognition—work that has been as good as or better than that of many a professional photographer—yet nine times out of ten the particular photographs have been selected from hundreds upon hundreds taken *without the stress and strain of an actual assignment*.

The public has a peculiar concept about professionals and the seemingly enormous number of photographs taken during a specific assignment. They have the mistaken impression that pros take a lot of pictures in the hope of getting a few good ones. Nothing could be further from the truth! In actuality, pros take a lot of pictures in the hope of getting a lot of good pictures. What the pro does is milk the scene to the limits of his or her imagination, that is, if circumstances permit; otherwise he or she attempts to make things happen to broaden the photographic coverage. During the course of shooting, pros do things with conditioned and comparative ease in spite of the pressures imposed upon them, and their instincts for splendid composition are as quick and inherent as their setting of focus and exposure. To paraphrase an old saying, pros have a way of making difficult things look easy—that's why they're professionals.

The average working photographer approaches an assignment with a professional manner, turning on the charm when necessary, performing as objectively as possible, and ultimately turning out a creditable job.

Conversely speaking, the average amateur usually does not shoot under adverse conditions since picture taking is a fun thing done at leisure. Amateurs are not agonized by the

WHERE the ACTION IS

DAVID SUTTON

THE AMATEUR—THE PROFESSIONAL

knowledge that every time they pick up a camera their reputation is on the line—and that's how it should be if it's their hobby.

While a pro may be excused a mistake here and there—for no one is completely infallible—it becomes an unpardonable offense if the goof involves an action situation or event that will never occur again. That means the pro has blown it, and his reputation suffers the slings and arrows of gossip. Bear in mind that responsibility and reliability, two equally



The types of situations and subject matter a professional encounters are often wide and varied. This offbeat candid portrait of John Denver was made during filming of *Oh God!* © David Sutton

important requirements, are integral to being a real professional.

Amateurs outnumber pros 1,000,000 to one, serious amateurs by 1000 to one, would-be pros by 500 to one, and semipros by 100 to one; and most of them have one thing in common—the portfolio. This work ranges from the ridiculous to the sublime. Some of it is so magnificent that on the surface it would put many a pro to shame. Nonetheless, unwise is the amateur who is lulled into a false sense of security and ego on the basis of a carefully hand-picked selection of salon prints that have been painstakingly produced over a period of years; for while such material may be an example of the individual's creative potential, it is by no means a real criterion as to what that individual can do *right now*, while under the pressure of being paid to do it, with the optimum of

professional results expected.

A real pro must have a thorough knowledge of color and black-and-white darkroom procedures. While the crush of assignments and location shooting might require resorting to the use of custom labs, the pro's total familiarity with darkroom technique enables him to let the lab know exactly what he wants and precisely what to expect in return.

One of the first things an amateur should do is learn the mysteries of the darkroom. Whether you build your own or rent one, the experience you gain will have a tremendous impact on your future shooting whether you remain an amateur or become a professional.

The amateur should understand that shooting as a professional is an entirely different ball game. For example, in editorial coverage there is no time for bracketing exposures—they must be right on the button. Deadline pressures and frantic pursuit of fast-moving subjects are part of the occupational hazards of being a professional. Circumstances like these require great capability, and this is when the men/women are separated from the boys/girls.

Another important difference between the amateur and the pro is the amount of equipment the pro has at his or her disposal plus the knowledge of how to get the most out of it. In this case the pro has a decided edge because of experience. Admittedly, I have seen many an amateur boasting equipment in the neighborhood of \$5000, sometimes more. However, it is not unusual for a pro to have equipment in excess of \$25,000 or quite a bit more. It should be noted that in today's highly competitive market the photographer not only competes against the abilities of other fellow photographers but their stable of equipment as well. Many assignments come up requiring the use of seldom-used and/or highly specialized pieces of equipment. Most pros have such equipment or they rent it. To repeat, where equipment is concerned, the pro has a definite advantage over the amateur.

The amateur must also pay heed to the all-important principle: One great shot doth not a professional make. Nevertheless, the amateur is a delightful individual, ever seeking, asking questions, experimenting, defying conventional procedures and techniques, and often venturing where a pro might fear to tread. It takes a lot of talent and ability to make the transition from amateur to professional; it also takes a lot of *chutzpah* to enter this overcrowded and highly competitive field. Good luck!!! ☐

SOLIGOR LENS

REPORT

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SLIDE...TWIST...SHOOT! SOLIGOR'S NEWEST "ONE TOUCH" C/D 70-222mm ZOOM WITH A NEARLY LIFE-SIZE MACRO IMAGE RATIO

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☐ Several months ago I had the opportunity to attend a unique motion picture workshop. Held in the tiny fishing village of Rockport, Maine, the course was conducted by Academy Award-winning cinematographer Vilmos Zsigmond and attended by more than 70 professional filmmakers from all over North America. Sponsored by The Maine Photographic Workshops, the week-long production and lighting seminar enabled students, cinematographers and lighting technicians to gain a better understanding and appreciation of the possibilities of the image in film.

For many of us it was a treat just to get away from our usual environments and become engaged in something more interesting than quotidian affairs. Coming from Los Angeles, where, like most residents, I've resigned myself to living in the midst of a yellowish haze (our euphemism for smog), I found it difficult, initially, to trust a body of air I couldn't see. Used to inhaling shallow gulps of the murky substance that envelops the freeway-ribboned L.A. basin, it took a day or so for me to get accustomed to breathing Maine's crisp September air. The leaves were beginning to turn crimson and gold, and tromping through piles of them on the way to screenings and location shots awakened long-dormant memories of Iowa falls in my midwestern soul. California date palms seldom lose their fronds, and even if they did, it wouldn't be the same as the annual descent of the colorful elm and maple leaves. But I digress.

Each day began with an 8:00 a.m. critique of the film shot the previous afternoon and evening. This was followed by an informal discussion by Vilmos on some aspect of motion picture controls. Lighting, stock, processing, filtration, camera placement and movement, and general production techniques were explored in these morning talks and question-and-answer sessions.

After a break for lunch, workshop participants, who were divided into two production groups, moved to their locations, set up lights and cameras, and worked through various assignments by improvising shooting scripts and camera setups. Locations included an opera house, a church, a school, a hotel room, interiors and exteriors of a house, and exterior street scenes filmed during the day and at night. Our assignments involved us with problems in filtration, pushing film, shooting day-for-night, flashing, using special-effects techniques, and executing convincing lighting setups. Vilmos visited each location to advise and answer questions.

FOCUS on Filmmaking

MARKENE KRUSE-SMITH

CINEMATOGRAPHERS COME TO MAINE

swer questions.

Filmmakers took turns filling crew positions, acting, directing and producing sequences, which were filmed with 16mm color negative film and recorded on 35mm still slides for the morning critique sessions. The afternoon and evening shooting assignments provided a "real-life" film production atmosphere for our two creative teams.

Dinner consisted of lobster or clams at one of the local restaurants, where we exchanged autobiogra-



Cinematographer Vilmos Zsigmond, center left, discusses lighting setup with the workshop participants.

phies, talked over the day's experiences, and swapped filmic yarns, some of which were as good as Penobscot Bay fish stories. By 8:30 or 9:00 p.m. we were gathered together at the Bay View Street Cinema in nearby Camden to view a feature film shot by Vilmos. Last year Zsigmond won the Oscar for Best Cinematography for his filming of *Close Encounters of the Third Kind*. Throughout the week Vilmos screened *McCabe and Mrs. Miller*, *Cinderella Liberty*, *Images*, *Deliverance*, *The Girl from Petrovka*, *The Sugarland Express* and *Obsession*, all movies he filmed. The prolific cinematographer discussed each film after its screening. He dealt with the inevitable barrage of questions occasioned by each film showing with warmth, thoroughness and good humor, obliging even the most involved technical queries with explicit, detailed replies.

"What do you call the dimly lit film-

ing style you used on *Cinderella Liberty*?" someone asked.

"Unavailable light photography," Vilmos deadpanned. "We had the lab push the 5247 stock to get a grainy, underlit, documentary effect." Zsigmond's soft Hungarian accent was delightful to the ears.

"Was it your idea or Robert Altman's to shoot that last scene of *McCabe* the way you did?"

"To tell you the truth, I don't remember. Making movies is a collaborative art. It doesn't really matter whose ideas are filmed; what's on the screen is what counts. If a director knows exactly what he wants and can tell me what he wants, then I will film it."

As director of photography, Vilmos controls the look of each filmed image. He can see a lighting setup the way the shot will look on screen before the scene is even lit. Above all, our workshop lighting schemes had to be realistic. Like his colleague, cinematographer Gordon Willis, who is often referred to as "the prince of darkness," Zsigmond emphasizes that where lighting is concerned, less is more. "You cannot go wrong if you underlight. Create shadow areas so actors are going in and out of lights. When you are all set up, turn one light out and see how the lighting scheme works. The old Hollywood method was to light each member of a group of people. Now it's more natural. I try to include the light source in my shot whenever possible."

The filmmakers who attended the Maine Workshop clearly worshipped Vilmos Zsigmond. They hung onto his every word. Whether he was telling anecdotes in class, leading a lighting session, or adjusting a scrim or barndoor on location, they always deferred to his judgments, tried to emulate his techniques, and accorded his skill at cinematography and lighting with genuine reverence. He was the master craftsman; we were the apprentices. At every location people asked each other, "How would Vilmos light this scene?" In setting up the lights and cameras, we pooled our various areas of expertise to obtain the most effective footage possible. And in the end, we probably learned almost as much from working with each other as we did from Vilmos Zsigmond.

After spending seven days living and breathing cinematography, acquiring new skills and refreshing old ones, all of us left Rockport as Maine Photographic Workshops director David Lyman predicted we would, with a deeper understanding of what it means to be a filmmaker. □



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□ This month's column is a bit unusual in that it started with a visit to my dentist. As I got off the elevator on the wrong floor, I ran smack into an exhibition of Canon cameras in full swing. Which is not so unusual except for the fact that one of the exhibits was a model I had not yet had the opportunity to examine.

Originally established as Precision Optical Research Laboratory (Seiki Kogaku) back in 1933, Canon has throughout the years concentrated exclusively on 35mm cameras, if we count the half-frame models.

In 1935 the company introduced the Kwanon, Japan's first 35mm focal-plane-shutter camera. This was almost a dead ringer for the Leica II, like many cameras of that era. The lens was a Kasyapa (pronounced ka-sha-pa) 3.5cm f/3.5, and the cloth focal-plane shutter had speeds of B and 1/20 to 1/500 second. Although the original Kwanon never got past the prototype stage, its basic style served as a model for Canons for nearly 20 years, up to and including the Canon IVSb.

First to reach the market was the so-called Hansa Canon in 1935, sold through Omiya Photo Equipment Co. The Nikkor 5cm f/3.5 lens had a bayonet mount and was removable, but no other lenses were available. Prototypes of interchangeable lenses had apparently been made because at least one of these cameras is known to have a Nikkor 3.5cm f/3.5 lens. Since the mounts are identical, however, even the Japanese experts are not sure if this lens was made for the Hansa Canon or the Canon S. A peculiarity of this model was the large frame-counter dial mounted on the front of the camera body.

The Seiki Canon of 1937 was an improved version of the Hansa. The frame counter was moved to the film wind knob, and the shutter speed range was extended to 1/2 second. The Nikkor 50mm f/2 lens had a bayonet mount.

Introduced just before World War II, the Canon J, also called the Canon Jr., was also the first Canon camera to be manufactured after the end of the war. This was a popular camera with a Nikkor 50mm f/3.5 lens at first and later a Serenar lens made by Canon.

A whole series of these Leica copies continued up to the Canon IVSb in 1952. Rangefinder models continued for some time after this, but with a different design. One that many will remember is the Canon 7 with its 50mm f/0.95 lens. I still remember being awed by this massive piece of glass on my first visit to Japan in 1963. This camera was unique

FAIR EAST JOURNAL charles marah

FROM KWANON TO CANON— COMPLETE DEDICATION TO 35MM

in that it had both a screw-mount that accepted Leica-mount lenses plus a three-claw bayonet mount for the f/0.95.

In October 1963 Canon introduced the Canon Dial 35, a half-frame that reminds one more of a telephone dial than anything else. Of interest was the spring-drive motor that advanced the film to the first frame and stopped, then rewound automatically when the roll was finished.

Although Canon is today one of the world's leading manufacturers of



The 250-exposure back is useful with the Canon F-1 Olympic because an ordinary roll of film lasts only four seconds!

35mm single-lens reflex cameras, luck wasn't so good in the beginning. Introduced in 1953, the Canonex was the first SLR and the only lens-shutter SLR ever produced by Canon. Equipped with shutter-priority EE exposure and an f/2.8 lens, the camera disappeared after only about 20,000 had been produced.

The Canonflex, the company's first focal-plane shutter SLR, also was short-lived. In spite of innovative features such as a coupled exposure meter, split prism and others, the trigger-type film advance lever located on the bottom of the camera all but prevented use with a tripod. This plus the lack of any wide-angle lenses sounded the death knell, and the camera lasted only three months from start of production.

With the advent of such cameras as the FX, FP, Pellix and FT, things

began to improve in the SLR branch. An interesting model that appeared during this era was the Canon EX EE and its improved version, the EX Auto. These both featured shutter-priority AE, but the most interesting point was the method of interchanging lenses. Only the front part of the lens was removed, then the substitute element of the desired focal length was screwed into place. Besides the 50mm f/1.8 standard lens, there were 35mm f/3.5, 95mm f/3.5 and 125mm f/3.5 elements. The first version was introduced in 1969, with the latter appearing three years later.

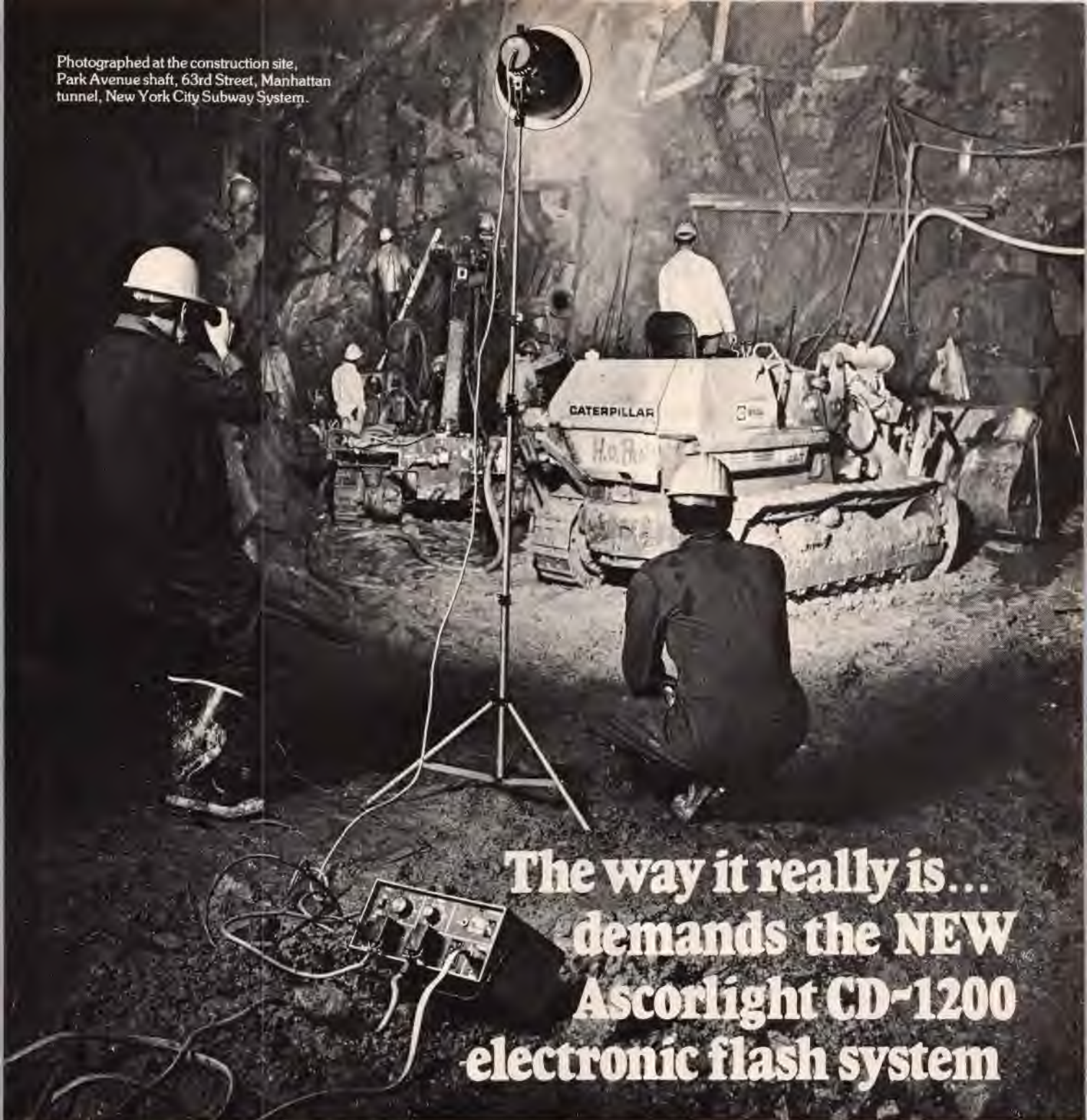
Backing up just a little to 1970, we find the Canon F-1, without doubt one of the finest 35mm SLR cameras available. With an extremely high degree of precision of almost jewellike beauty, the F-1 is more a system than just a camera. About 40 lenses, from 7.5mm fisheye to 1200mm super telephoto, are available, not to mention the approximately 180 different accessories. We'll come back to a special version of the F-1 later.

Later Canon models include the EF and the later AE-1, AT-1 and A-1. The latter features an almost bewildering array of capabilities, including shutter- and aperture-priority metering plus other options. Since all of these have been covered elsewhere, let's go on to the camera that started this whole thing—the Canon F-1 Olympic shown in the photo.

Introduced at the Sapporo Winter Olympics in 1972, this camera is basically a Canon F-1 equipped with a fixed pellicle (semireflective) mirror and permanently attached motor drive capable of speeds of up to nine frames per second! The Olympic also differs in that there is no exposure meter and the top shutter speed is 1/1000 instead of 1/2000 second. Mr. Sakurada of Canon explained that this is because an accurate shutter speed of 1/2000 cannot be guaranteed at such a fast firing rate. The battery pack holds 20 penlight batteries so the entire unit is quite heavy. Low positioning of the wrist-strap and shutter release, however, compensate to some degree, and the camera handles quite well.

The use of a pellicle mirror may seem somewhat disadvantageous since all of the light transmitted by the lens does not go to the film. In reality, however, the effective efficiency of the lens is lowered only about 1/3 f-stop, so in most situations the difference would not be noticeable. Any disadvantage here is more than offset by the nine-frames-per-second firing rate. If you really like fast action, this is the camera for you! Just don't ask the price! □

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□ The other day I was reminiscing about when I had first called myself "photographer," that sacred, awesome word. I had been free-lancing for a year doing odd photographic jobs. In between, besides starving, I would do my "personal" work. I recalled the giddy self-confidence and almost youthful arrogance—or perhaps it was optimism—with which I pounded one day on the door of Norbert Kleber's Underground Gallery (no longer in existence). As a self-proclaimed photographer I was convinced that I now deserved to have an exhibition and had come to show my portfolio.

Director Kleber silently thumbed through my black-matted prints (very tacky!): sun glistening through a silhouetted tree; an antiquated woman fumbling over pigeons in Central Park; a bum sprawled on a bench; my shadow stretched thin by the setting sun; a delicate flower pushing its way through a crack in the cemented sidewalk. I had presented a smattering of practically all my photographic discoveries—pictures I thought were exciting revelations of everyday things most people passed by unseeing. The fact that the pictures had no relationship to one another, or that they were painfully typical of every beginner's snapshots was not yet part of my self-education. Norbert, in his inimitable Swiss manner, patiently educated me. A gallery portfolio, he explained, generally had a cohesiveness or coherency that linked the photographs together and revealed the photographer's unique vision. I did not truly understand what he meant. All I understood at the time was that I—and my work—was being rejected. I felt my ego crumple.

In long retrospect I recognize that I was a visual dabbler, a pattern I find echoed in the work of many nascent photographers. I was one of those overzealous kids Duane Michals once criticized for wanting to be exhibited too soon who get nipped in the bud because "there is a danger in not ripening." I had not yet made a serious commitment. Ripen? I had not even planted the seeds.

Yet it is a necessary phase for most beginners, enticed into seeing surroundings differently, to begin to translate and slip *everything* into neatly packaged frames. It is stimulating, intoxicating, even overwhelming; and that's the problem. There is no concentration of energy. There is no thought.

Eventually I learned that the "cohesiveness" Norbert had talked about could be achieved by developing and exploring a theme over a pe-

In sight PEGGY SEALFON

CONFESSIONS OF A DABBLER

riod of time—which brings me to the point of this nostalgic stroll down memory lane.

A theme will encourage concentration. And it provides a thread that ties together a series of photographs. Working within such a framework can be challenging, and more important, it can impose a discipline and promote organization of ideas. Themes are limiting but not confining. Themes can be as varied or as subtly distinct as wines.

A theme, such as portraiture, ex-



My fascination for window views on the world became parlayed into a continuing theme—finally a concentration! This one was taken from an old abandoned house in Virginia's Shenandoah Valley. ©Peggy Sealton.

plored by two artists will be vastly dissimilar. Consider Arnold Newman and Irving Penn. Newman's famous portraits of personalities (*One Mind's Eye*) integrate his sitters with their natural surroundings to define and enhance the characterizations. Penn's portraits (*Worlds in a Small Room*) are quite the opposite. His sitters have been purposely separated from their environments. The themes are similar but hardly identical. Newman's portrait theme is well-known people in the arts; Penn's is little-known people in the world. In addition, it is the unique approach of each artist that makes their works distinctive. (I'll discuss "approach," or rather "style," in a future column.)

In a documentary (or reportage) theme, not only approach but time can make a significant difference. Lots of people have made shots of firemen battling a blazing inferno, but how many have taken the time to honestly study the lives of these courageous men? I know only one—

photojournalist Jill Freedman. Jill lived among firemen for close to a year, and her book *Firehouse* records not just the obvious dangers of firefighting but the joys and compassion of long moments in the quiet tension of the firehouse. Generally, a documentary mirrors the social scenes of our times, portraying people and passage of time and events. Edward Steichen once said the mission of photography is "to explain man to man and each man to himself." Documentaries are harbingers of that mission.

While the emphasis in documentaries is on content, structural themes are more dependent on pattern, movement, color, such as in themes of "light" or "macro." (However, with motifs—or any repetitive schemes—there is a risk of becoming trite or gimmicky.) Similar subjects can also unify a portfolio, e.g., landscapes, buildings, flowers. Elliott Erwitt once did a whole book (*Son of Bitch*) on the subject of dogs, and it's the funniest, wittiest compendium of dog pictures.

Another fertile field of themes is the conceptual, which reflects the intangible, "feeling" elements of our lives (i.e., fear, change). Photographers such as Duane Michals and Arthur Tress often construct the realities for their ideas by actually setting up the situations (choosing locations, models, etc.). Other conceptualists depend upon photographic manipulations. Adal Maldonado cuts and splices pieces of images to make his unnerving photomontages; Jerry Uelsmann uses multiple printing for his fantastic images.

Themes sometimes have to be imposed from an outside source, chosen from a list of ideas outlined in a book, or suggested by a contest or course. Other times, in looking back over his work a photographer may discover a theme already surfacing naturally and can concentrate and develop this self-generated idea.

I discovered that I had an affinity for windows. Whenever I'd walk into a new setting, I'd immediately gravitate to the nearest window on the world outside. With this self-observation I began recording these views as a continuing theme. (Of course, I take other pictures, too.)

However, I must confess I no longer call myself "photographer." I enjoy taking pictures immensely but I think the title "photographer" should be reserved for those special individuals who have made a steadfast commitment and persevered (instead of dabbled)—artists like Jill Freedman, Duane Michals, Arnold Newman... and maybe you. □



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□ As you know, photography began with light impinging on a sensitive surface. This was first accomplished by using the famous pinhole camera, and it wasn't long before improvements were made in the form of lenses. The lens cap, which we now use to protect the lens when the camera is not in use, was once also pressed into service as a shutter. You mounted the camera on a tripod, removed the lens cap, and slowly counted off the seconds. Then you replaced the cap to cut off the light.

Nowadays we have superlative electronic controls. As electronics developed microminiature circuitry and made it easily and inexpensively available, it came into play more and more. Behind-the-lens light meters offered a measure of control that we didn't have before. Spotmeters permitted us to get a light reading on any discrete portion of the area we were photographing. It was but a short jump to the automatic-exposure camera. You set the ASA, pick a shutter speed, focus and shoot. The camera does all the rest with no further help from you, the photographer. What's more (happily), every frame is properly exposed. All you have to do is focus and press the shutter-release button.

When I first began to play with automatic-exposure cameras, I was intrigued by what might be the next possible step toward full automation and decided that, with the current state of the art in electronic controls, it would have to be automatic focusing. However, I did not expect to read all about it in the next issue of this magazine. The Polaroid Pronto! Sonar OneStep and SX-70 Sonar OneStep cameras have a small sound transceiver built in and coupled to an electric motor. This actually permits you to simply point the camera and shoot, wasting not a bit of concern over the exposure and/or focus. The lens barrel simply rotates as the electronic beeps go out, strike the subject and return. The time lapse in microseconds between transmission and reception marks the distance. And Konica has introduced its own autofocus camera—the C35AF—which views the subject through two image detectors, and when the two images achieve maximum correlation, the camera's computer control automatically takes care of lens focusing and exposure metering. Add to this the elimination of the need to so much as advance the film, with auto-winders now commonplace, and you really begin to wonder what might be next!

It is to that question that I address

ELECTRONICALLY YOURS

BYRON G. WEIS

WHAT'LL THEY THINK OF NEXT?

myself, and the obvious answer has got to be automatic composition. Now before you throw your hands up and think it's a pie-in-the-sky fantasy, let me assure you that we have the technology to accomplish this today.

How would it work? Relatively simply. We all know that microminiaturization is a firm reality. We also know that a well-balanced photograph is usually well-composed. There are times that you do not want a photo to be well-balanced, so an override



Shooting from the hip will be a definite possibility when you have a camera that's equipped with automatic-composition capability and an audible indicator.

would be provided.

The system would consist of a photosensitive grid placed between the eyepiece of the viewfinder and the groundglass. The grid would be transparent and would consist of individually dispersed photocells on the base material. Each photocell would measure the light on its surface and, using a computer gating circuit, would flag an indication that the light at one side was heavier than the light on the other side. As a result, you would be able to balance the light on all sides of the frame in order to check and see that the photo was well-composed before shooting.

There would be certain advantages to automatic composition, or, as it might be called, "automatic framing." For one thing, an audible signal could be provided so that you could literally "shoot from the hip." There would be no need to look through the viewfinder at all, for the signal would tell you when you had a well-framed, well-balanced photo in the offing.

The same system could provide a

"safety" margin in framing, so that you would not inadvertently cut off Aunt Minnie's head. The system might provide a two-tone signal so that poor balance or too-short a subject-to-lens distance would be recognizable.

Now, you must be thinking that this takes all the fun out of photography. The point is, today we have a level of automation so far beyond anything photography has ever known in the past that it would be totally unrecognizable by that poor guy holding his lens cap in his hand and counting off the seconds! Remember that all this automation results in just one thing—convenience. And for the purists there are still the necessary overrides, just in case.

The next question that must come up is, "Where do we go from here?" And the obvious answer is, "You name it!" With miniaturization and the rapidly advancing strides being made daily in technology, it seems that all you need do is conceive of a new convenience, and it isn't long before that conception becomes a reality. What is happening in all science now is something that should have happened long ago. Our scientists and engineers are all dedicated to the advancement of their own scientific disciplines, and seem to be unaware of the problems that exist in other disciplines. But as they solve their own problems, they look to other fields to find problems that could be answered by what is taken as matter-of-fact in their own field. Electronics engineers used to concentrate on vast advances in electronics. Having solved many of their own problems, they now turn their attention to other sciences—medicine, chemistry, and, yes, photography. This blending of the sciences results in better, lighter, more efficient equipment for the modern photographer.

Many years ago, after visiting a salon show, I studied the winners and saw color prints with a blue cast that indicated either that the photographer had forgotten whether his film was "indoor" or "daylight," or that a filter was accidentally left on the lens. In fact, many respected techniques, solarization and reticulation, for example, have been the result of accidents. This more than once prompted me to say in print that "Good photography is a science—great photography is an accident."

By taking advantage of the scientific advances available to us, we can spend more time on those factors that cannot easily be automated and give ourselves the opportunity to have a "happy accident!" □

Photographic vision is a multilayered abstraction—a system of distortion, confinement and suspension. Motion is truncated, time suspended, form distorted and confined within a frame frequently as small and as arbitrary as 24 × 36mm. It may be argued convincingly that the machines we use to glimpse and snip fragments out of time and space are still very primitive. We must admit that the highest technology of the lensmaker, the most fiendishly clever advances in microcircuitry, and the most perfect colloidal suspensions of silver halide still impose restrictions when they are integral to the process of communication.

Perhaps the most sublime perfection in any art or craft (which is attained only for moments, even by the best practitioners) approximates a dreamlike state. The finest scales are internal and silent—the racer who shifts gears smoothly and almost imperceptibly at exactly the right moment; the precise choreography of the pianist's fingers; the poet's intuition for imagery and rhythm. Intuition. It is only one component of the artistic process, yet possibly the most important. True, one is born with it or one is not, but undeniably it may be honed through the continual exercise of blunter perceptual mechanisms. With the hundreds of near misses, the artist practices to be. Like the archer, his will to hit the mark is constant, but will is merely a catalyst for the more elusive quality that permits the attainment of truth. To put it another way, hard work and dedication create the conditions favorable for magic to occur. And if anything within the realm of human experience may be justifiably called magical, it is the creative act. An idea, a concept, an image occurs spontaneously within a single consciousness and demands to be shared. If the idea is sufficiently brilliant or the image particularly beautiful, it permeates our collective consciousness like an irrepressible life force.

Just how significant is the choice of tools to the artist? It is of no consequence to the poet or his readers whether he scrawls his work in greasy-spoon diners with the yellow stub of a Dixon Ticonderoga or an Eberhard Faber Mongol. The symbolic richness of language is in no way compromised by variations in pencils. Pencils don't write poetry; poets do. And while there is some truth in the corollary that photographers, not cameras, make photographs, an important distinction must be made: The camera is integral to the photographer's conceptual process. At the

IN JUST SECONDS

JOE NOVAK

TOOLS AND AESTHETICS

last and (in photography) most critical instant, the photographer habitually covers his eyes with a camera.

Since the eye does not approximate the qualities of a 50mm Summicron lens, since the retina is not akin to a postage-stamp-size piece of Kodachrome, and since reality is seldom found oozing through a microprism, the photographer makes a number of accommodations. Some of these are subtle; some are not. As I've already pointed out, it is difficult enough to be a good photographer.



Photographer Jerry Berndt in his studio. Low-vibration Leica permitted a handheld shot with slow film. Lens was a 35mm Summicron.

All cameras distract; the best camera is the one that distracts the least.

The professional photographer has little choice but to peer through a 35mm single-lens reflex most of the time. The varied demands of commercial assignments require the most versatile equipment. A client may need macro shots of poisonous mushrooms, a fisheye photograph of his junkyard or coverage of the annual return of the buzzards to Hinckley, Ohio (mid-March, in case you're interested). Nature did not equip us to visualize the world in 16mm or 500mm, so we need the little ground-glass to act as interpreter. In the same way reflex viewing helps the professional to preview the effect of an extreme focal length, it helps the less experienced photographer understand how the 50mm lens sees the world.

No question, the 35mm SLR is a thing of beauty, probably the best all-around camera ever developed. But

there is a price to be paid for all this versatility. It comes in the form of a murky, low-contrast viewfinder in poor lighting situations, in the noise and vibration of a flapping instant-return mirror, and in the distraction of that momentary flicker between frames. Worst of all, the single-lens reflex isolates the photographer from his subject and creates one more degree of abstraction. Reality becomes fragmented and isolated, liquified upon the little glass screen suspended in a black tunnel. Pretty, out-of-focus blobs of color compete for our attention with primary form. There is a diminished contact between the photographer and the real event in front of the camera.

There is another way. Long before the motor drive, long before the instant-return mirror, long before the catadioptric lens there flourished a species of camera that has nearly become extinct: the 35mm interchangeable-lens rangefinder camera. There were Leicas, Contaxes, Nikons and Canons, all superb. Drag out one of your old Bob Dylan albums, *Highway 61 Revisited*, and check out the cover. Suspended from a pair of "O" rings next to Bob is something quite different from what you'll find suspended on most album covers these days. It's a Nikon with no pentaprism, and with no need for one.

Having no need for the complex and delicate mechanisms of instant-return mirrors and automatic diaphragms, the rangefinder camera is an exceptionally reliable machine. It is light and compact, and well-sealed against dust.

We now look upon the rangefinder camera as a specialized tool, despite the fact that with auxiliary finders it is usable with focal lengths ranging from 21mm to 135mm. In the case of the Leica, longer lenses may be accommodated with an accessory reflex housing. An interesting phenomenon: Ask an old pro who seems to own every lens in the catalog to show you the photographs that are the most meaningful to him personally. A surprisingly high percentage of these will have been made with lenses in the modest range of 35mm to 90mm. This happens to be the range of focal lengths best handled by the rangefinder camera. More important, these lenses depart the least from our natural perspective. The rangefinder camera projects its bright-line rectangle into a real world untouched by Fresnel lines or glittering microprisms. Through this kind of finder we see all that is there, and respond to it . . . instinctively. I'm awfully glad you can still buy a Leica. □

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□ When I stagger sleepily into the bathroom each morning and peer into the mirror, I see the same thing—me! The image, tired, grumpy and sometimes more disheveled than usual, remains for the most part the same. Not so on TV. There, in a commercial, when a man looks at himself in a mirror, he's liable to see anything—from a geriatric, wand-wielding tooth fairy to his next-door neighbor reaching through the wall to borrow his deodorant!

When I call out for a pizza, it's delivered at a snail's pace by a foot-shuffling, scowling, unkempt teenager. In the commercial it's speedily delivered by a svelte, smiling, soda-sipping siren who whisks along the crowded city streets on a skateboard!

Other ads depict housewives who, rather than driving to their local supermarket, enter it by stepping into their TV sets; and buxom windblown damsels sit behind the wheel of their car, not on the highway, but on the pinnacle of a mountain without a road in sight.

These commercials, which range from the mildly absurd to the ludicrously impossible, all have one thing in common: They use the principle of incongruity to startle the viewer and gain his attention.

Incongruity means something that is inconsistent within itself. Visual incongruity shocks us by depicting impossible or improbable situations. For instance, a woman stepping through her television screen like Alice through the looking glass into the supermarket is a physical impossibility. An automobile situated on an isolated, roadless mountain peak is not impossible—it could have been hoisted there by a helicopter—but it is certainly improbable. In either instance, the incongruity of the situation intrigues the viewer and, it is hoped, induces him to look at the advertisement.

The use of incongruity in the visual arts is by no means new. The Dadaists used it in their paintings to shock, ridicule and insult the bourgeoisie, whom they held responsible for the insanity of war. The Surrealists used it to illustrate the fantastic world of the subconscious (see "Four Dill Pickles and a Cup of Cocoa," "Self-Assignment," September, 1975 issue). And now the advertising agencies use it to sell us underarm deodorants, noncaloric beverages, and other bedrock essentials of the American Dream.

Despite its past use, or misuse, the principle of incongruity remains an extremely effective device for creating exciting, attention-getting photographs. It is especially so in photog-

SELF-assignment

BEN HELPRIN

SHOOT YOUR IMPOSSIBLE DREAM

raphy because of the camera's ability to present improbable, or even impossible, situations in a visually realistic and convincing manner—all of which leads us to this month's self-assignment:

Create a photograph that gains its visual impact through the depiction of an incongruity. The incongruity can be set up beforehand and then recorded with the camera, or the camera itself can be used to produce the effect.

Dreaming up improbable, incongru-



Karen Dinstriand, a student of mine at Brooks Institute, created this shot by taking two separate pictures from the same viewpoint. She then carefully cut out the mirror image from one print and pasted it over the other print to produce a subtle but extremely effective surrealist image.

ent situations can be a lot of fun. It can also be difficult. The job becomes easier when we divide the situations into various categories. Let's look at some of them.

Incongruous action: This category startles the viewer by having the subject do something that is completely out of character. Therefore, choose a subject who represents a definite "type," someone whom the viewer can readily identify and, even more important, someone about whom the viewer will have definite, preset notions concerning behavior. A burly, tough-looking construction worker; a petite, "Miss America"-type teenager; a sweet, frail old lady—these are excellent examples of such stereotypes. Now think of that person performing an action that is completely unexpected: the hard-hatted construction worker sitting by his bulldozer with granny glasses perched on the end of his nose as he delicately stitches petit point; the petite teenager deftly

changing a tire on a Mack truck; and the frail grandmother, leather-jacketed and whooping it up on a Harley!

Incongruous environment: A place for everything and everything in its place. Logical, isn't it? Not if you take the literal nature of the environment and push it to an extreme. For instance, a body of water is the proper place for fishing, and a freeway is a proper place for driving. But if the body of water happens to be contained in an aquarium, or the vehicle being driven on the freeway happens to be a tricycle, that's incongruous!

Incongruity can take many other forms such as peculiar tool usage (carving the Thanksgiving turkey with a chainsaw) or proper dress (a garbage collector wearing a tuxedo and white gloves as he disposes of the trash), but by now I'm sure you have the idea and can come up with categories of your own. The possibilities are endless and limited only by your imagination. Remember, none of the pictorial elements are incongruous within themselves. They become so only when you put them together.

So far we have been dealing with photographs of improbable but not impossible situations. Using photography to depict the visually impossible is definitely possible, but as the navy engineers say, it takes a little longer. Fantastically incongruent images are not difficult to dream up. In fact, that's exactly where many of the Surrealists got their pictorial ideas—from dreams. In the dream world our imagination is freed from the logical barriers of time, space and reality. Metal watches can melt in the sun, men can float effortlessly above the earth, and steam locomotives can come thundering out of the fireplace. This is incongruity taken to the extreme. Your local library should have art books containing reproductions of surrealist paintings. Look at them, add a dream or two of your own, and you'll have no trouble coming up with ideas for wildly incongruent imagery.

Putting that image into a photograph is another matter. Multiple exposures (either in the camera or in the enlarger), negative sandwiching, and paste-up montage can all be used to create a single seemingly impossible picture from separately photographed subject matter. A wide-angle lens can be used to create a startling, irrational perspective, and convoluted reflecting surfaces (such as a twisted sheet of Mylar or aluminum foil) will produce bizarre changes that will make the image incongruent within itself. Again, the possibilities are limited only by your imagination. May yours reign free! □

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Model 277AT "The Craftsman": Remote focus with timer. Same specs as 266A3.

The new line of Argus Movie Projectors is as follows:

Model 833CZ "Little Moe": Compact dual 8, zoom projector, 400' capacity with auto threading.

Model 844P "The Performer": Dual 8, auto threading and take-up.

Model 855MV "Multi-National": Multi-Voltage, Dual 8 — anywhere in the world. 110, 135, 220, 245 volts, at 50 or 60 cycles (HZ). Auto threading, rewind and take-up.

Model 877RZ "The Virtuoso": Dual 8, f/1.5 Zoom lens, forward, reverse and still feature and auto rewind.

For more information about the new Argus projectors see your nearest photo dealer or write to the attention of our Projector Sales Manager at the address below.

* Rototray is a registered trademark of the GAF Corporation

argus Inc., 200 Roosevelt Pl., Palisades Park, N.J. 07650



An EL Nikkor lens is an inexpensive way to add Nikon quality to your enlarger

You take special care with your photography. You invested in a fine camera. You're on the button with your focus and exposure. And, your negatives are everything they should be. But, when you put them into your enlarger, something happens. The crisp definition, the wealth of detail, the rich colors you know are there, just aren't — not in the prints.

Very likely, the villain is your enlarger lens. (Honestly now, did you choose it as carefully as you did your camera lens?) It actually may be "filtering out" the quality in your negatives, instead of faithfully reproducing it.

The solution is as simple as it is inexpensive. Get an EL Nikkor enlarger lens. It's made by Nikon, specifically for the finest color and b&w enlarging. With designed-in sharpness and color correction to meet or exceed the most critical professional requirements. And, there's no focus shift when you stop down, which is made easy by positive click stops and easy-to-see white aperture markings.

Your Nikon dealer offers EL Nikkor lenses from 50 to 360mm to cover formats from 35mm to 11x14, at very affordable prices. See him soon — and see the difference in your enlargements. Or write for Lit/Pak N-15. Nikon Inc., Garden City, N.Y. Subsidiary of Ehrenreich Photo-Optical Industries, Inc. (In Canada: Anglphoto Ltd., P.Q.)

LIGHTEN THE LOAD

Articles appearing lately dealing with packing a gadget bag for a day's shooting have had one thing in common—pack lightly. Karen Sue Geller's "Tools of the Trade" column in the September '78 issue gave instructions for making a monopod as given by the West Coast Nikon School. I made one having a total weight of 1½ ounces. I used one ¼-20 eye bolt, one ¼-20 nut, one ¼ washer (outside diameter of ¾ inch), and 3/16-inch nylon parachute and utility cord. The cord has a 650-pound breaking point and comes in a plastic bag containing 40 feet for \$1.29. After placing the nut and washer on the bolt, I marked the bolt to provide a threaded tip of 7/32 inch to enter the camera body and marked the thread. I backed off the nut a short distance and put a drop of Krazy Glue® on the thread and returned the nut to the mark. I placed another two drops of glue on the top of the nut and placed the washer on the prepared surface. The washer provides security from damage to the camera body from the nut and gives a larger surface to set against the camera. After the glue had set, I secured the nylon cord through the bolt's eye with a bowline knot. This lighter monopod is easily carried in a pocket or purse when the gadget bag is not used and will do everything expected of the chain arrangement at less cost.

Archie H. Palmer
Glenview, Illinois

SECURE INVESTOR TEACHES COURSE

I personally love to see a magazine with a high advertisement content. It lets me know that my subscription is secure. Nothing is more exasperating than to have a periodical cease publication and swallow the money I've invested in a subscription.

Publications basically spend their money on three things: writers (salaries), production and printing. Successful publications spend more than the bare minimum on all three.

Let me offer a quick economics course. First take a dollar bill. Grasp firmly between your two hands. Now pull. That's funny, it is the same 6¼ inches it was. It cannot be stretched. If you pull hard enough, however, it may tear—just as may the budget of a magazine or any other business.

Without all those ads you complain about, you wouldn't have the quality or writers featured here. Or you wouldn't have all that slick process color and layout made possible by the production department. Or you

other VOICES

wouldn't be able to enjoy the top-notch printing, which makes viewing pictures a joy rather than a chore.

If you do not have the resources, you have to scrimp somewhere. And when you scrimp, you do not have the high-quality magazine such as Petersen publishes. Keep up the good work.

Jock Ellis
Nahunta, Georgia

TECHNICAL REQUEST

As a new subscriber to your magazine, I'm sorry to say that I'm rather disappointed in it.

I would really like to see more technical data and laboratory tests on new cameras and lenses. I am happy to say I've really enjoyed your "Nuts & Bolts" (see April 1978 issue), "Tools of the Trade" and also "Product Proof Sheet."

Gary A. Goldstein
Tustin, California

THANKS FOR D-23 HINTS

Thank you for your help with D-23 and Mr. Farber's refined D-23 (see "One to One," April, 1978 issue and "Guide Lines," June, 1977 issue). I have had very good results from both of them. However, I have used the D-23 at 6½ minutes for my Kodak Tri-X Film as per the instructions in the article in your magazine concerning D-23 (see "Spoon Up a Savings," April, 1977 issue). This development time and the spoon method for D-23 give me excellent negatives on both Tri-X and Kodak Plus-X Films. I have also used the refined D-23 during hot spells and have found it very useful. Please keep up the very good work of your magazine—I find I could not do without it. You do not push the purchase of photographic equipment as do the other photographic magazines.

Lewis D. Miller
Redwood City, California

WRITE A LETTER TO A LONER

Am I the only person in the nation still using a View-Master Personal Stereo Camera? Mine is one of the original models made for Sawyer's Inc., of Portland, Oregon. A later model named the Mark II was discontinued in 1971 when Sawyer's was absorbed by the GAF Corporation.

For more than 20 years I have kept a family record on the circular reel mounts, which hold seven stereo views. From a 35mm 36-exposure roll of film I can get 70 pairs of pictures. I have my own film cutter and can still buy the blank reels from GAF, so I can mount my own film after it is developed.

It's a little tedious mounting the small pieces of film, but I believe the View-Master system is the most satisfying way to keep a personal picture record. The camera is simple to operate, and the three-dimensional view puts the frosting on the cake.

I have found no one, including clerks in camera stores, in recent years who knew that such a picture system existed. But somewhere there must be others who still use the View-Master Personal Stereo Camera. I'd like to hear from them.

Cecil Lynch
6810 N. 7th Street
Phoenix, Arizona 85014

See "Vintage Viewfinder," this issue.—Ed.

BEHOLD A GREAT COVER

I first learned of your publication with the May, 1972 issue. I thought that a return to good photography on the printed page was going to happen at last.

Perhaps good photographers don't often permit photo magazines to use their work, or it could be that the magazines can't or don't pay a reasonable amount for the right to publish really outstanding photographers' work? Whatever the reason, the pages of all photo magazines seem to be filled with nonpicture material.

Tonight while waiting to meet a friend, I paused at the magazine counter at the drug store. I had not seen a PhotoGraphic for a long time. Words can not express my excitement when I discovered your September, 1978 cover (photographed by Parry C. Yob). I have a total of 247 photography magazines in my collection, and that September, 1978 cover is the *only* really great photography magazine cover I have from a domestic magazine.

Good or bad photography is in the eye of the beholder! However, a beholder bewildered by a barrage of bad photographs becomes unable to recognize which of the bad is better. As more people become too lazy to learn the craft of photography, there are fewer good pictures to look at.

David Petty
Franklin, Indiana

(Continued on page 92)

Action Ready



in sand, dust, snow and underwater

ewa

Flexible Camera Housing



underwater...

at the beach...

The "Space Suit" for your camera!

Run, climb, walk, swim, float, fly, or dive into the most extraordinary situations with an EWA protective camera housing. Recognized by seasoned photographers for its unexcelled flexibility while keeping valuable camera equipment safe from water, sand, grit, smoke, and other harmful elements. Made of tough, special formula PVC-Film.

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Movie Cameras...

from \$49⁹⁵

See your Photo Dealer or write:

PIONEER & COMPANY

Station House, 900 Haddon Ave.,
Collingswood, NJ 08108 (609) 854-2424

"EXCEPTIONAL." SEKONIC'S STUDIO PROFESSIONAL METER.

The photo critics took a hard look at Sekonic's L-398 Studio Pro incident/reflected meter. They wrote, "The real test is with the results and at this, it was *exceptional*." (Studio Photography) "The accuracy is well within ¼ stop at high, medium and low light levels." (Photo World). For the full test reports write: Copal Corporation of America, Dept. 1-P 58-25 Queens Blvd., Woodside, N.Y. 11377. 212/672-9100.

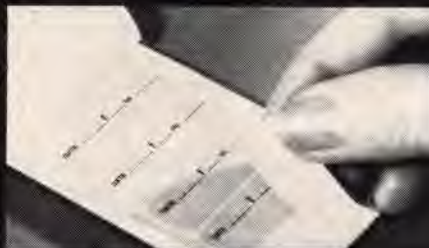


PRODUCT PROOF sheet



NEW MACRO SOUND CAMERAS FROM COSINA

Two new Cosina Super 8 sound cameras designed to accept 50- and 200-foot film cartridges have been introduced by the Cosina Division of Berkey Marketing Companies. Both cameras weigh less than three pounds and have completely automatic exposure control with ASA 25 to ASA 160 films, as well as reflex viewfinder/control centers that incorporate both a split-image rangefinder for critical focusing and a display of all necessary film information such as f-stop readout, exposure warning, sound-monitor signal and film-end signal. Manual control is also provided so that the cameras may be operated at 18 or 24 frames per second. The cameras were designed so that there is no need for the user to remove his eye from the viewfinder during filming. Even external power zoom controls are "touch-coded" for easy identification of the tele- and wide-angle control. The Cosina XL 204 Macro has a Cosinon 9-36mm f/1.2 zoom lens that focuses as closely as 4.9 feet in normal mode and 2.4 inches in macro mode. The Cosina 206 Macro has a Cosinon 7.5-45mm f/1.8 lens, which permits close-ups to 3.9 feet in normal and up to less than one inch in macro mode. Both cameras have power zoom and manual fade as well as detachable electret boom microphones and sound-input jacks and earphones to permit monitoring microphone pick-up before and during filming. There is automatic sound-level control as well as manual level control and sound fade. Powered by six AA alkaline or nickel-cadmium batteries that can be checked by a test button, both cameras with a 200-foot film cartridge are capable of more than 13 minutes of uninterrupted filming at 18 fps. The Cosina XL 204 Macro has a suggested list price of \$499.95, and the Cosina 206 Macro lists for \$599.95. Prices include boom microphone, earphone, lens shade, rubber eyecup and lens cap. For more information contact Cosina Division, Berkey Marketing Companies, P.O. Box 1102, Woodside, New York 11377.



IDENTIFY 'EM... QUICKLY

The Kwik ID label is a new product from Miner Specialties Company that allows easy identification of photos. Each package contains 55 self-stick labels where the photographer can record the date, f-stop and number of the photo. Each package of 55 has a list price of \$.99. For more information contact Miner Specialties Company, P.O. Box 636, Cupertino, California 95014.



PROJECTOR OFFERS FREEDOM OF CHOICE

The Kindermann AV 100 projector is a lightweight (less than nine pounds), compact (5x10x13 inches) integral reflex projector system for 2x2-inch slides. The daylight projector has a 7x7-inch image that is reflected from a front surface mirror onto a self-contained screen, or the AV 100 itself can be used to project images on an exterior surface. Trays hold either 36 or 50 slides, and the 100-watt halogen lamp used is constantly cooled by a blower fan. As well as projecting slides close-up or projecting them onto a large screen, the Kindermann AV 100 can also be used as a light box. With lamp and slide tray, the Kindermann AV 100 has a suggested retail price of \$285. A manual model lists for \$185. For more information contact Ehrenreich Photo-Optical Industries, Inc., 101 Crossways Park West, Woodbury, New York 11797.



THIS STANDS ALONE

The Pace Multi-Purpose Print Squeegee Board allows efficient squeegeeing of resin-coated, color and conventional prints, while saving darkroom space. The board, which has an oversized surface of 12½x16½ inches and comes with a finger hole to facilitate lifting wet prints from the board, can be set up over any flat print washer or darkroom tray, and allows prints to be easily added or removed from the wash while the board is in use. The unit, which is free-standing, has an adjustable rustproof steel base so that the unit may become a photographic work desk for marking contact sheets. It has a translucent work surface, so that with a light behind it, it can be used as a light table for working with negatives and slides. The Pace Multi-Purpose Print Squeegee Board has a suggested retail price of \$9.95. For more information contact Pace Photographic Products, Inc., 2204 Morris Avenue, Union, New Jersey 07083.

(Continued on page 30)

Please mention PhotoGraphic Magazine when inquiring about the items listed in "Product Proof Sheet."

New product information should be sent to the attention of Charlene Marmer Solomon, Managing Editor, PhotoGraphic Magazine, 8490 Sunset Boulevard, Los Angeles, California 90069.

DAMN THE COMPROMISES... MAKE THE BEST PRINTS IN THE WORLD.

Until recently you had to compromise with an enlarger if you wanted to do both black and white and color printing. Why? Consider two facts of life.

1. Most enlargers were designed for black and white printing. When amateur color printing came along, manufacturers added a filter drawer to their conventional condenser enlargers to accommodate color printing. But this compromise didn't satisfy the photographers who were mainly interested in making color prints.

2. In an attempt to simplify color printing, integrating diffusion heads with built-in filters were devised, but they require the removal of condensers. Without condensers, black and white print quality suffers. And color

printing times may be quite long, allowing excessive heat build up at the negative and leaving print quality at the mercy of transient vibrations.

All of the above was very much in mind during the development of the Vivitar VI™ enlarger. It was designed from the beginning to eliminate the necessity for compromises in both black and white and color printing. Of course it's a condenser enlarger, because any experienced darkroom man knows condensers make sharper prints.

The Vivitar VI is a big, rigid, no-nonsense enlarger that handles like pro-lab equipment. The head glides up and down the girder-like box beam column on ball bearing rollers. Constant force counter-balance

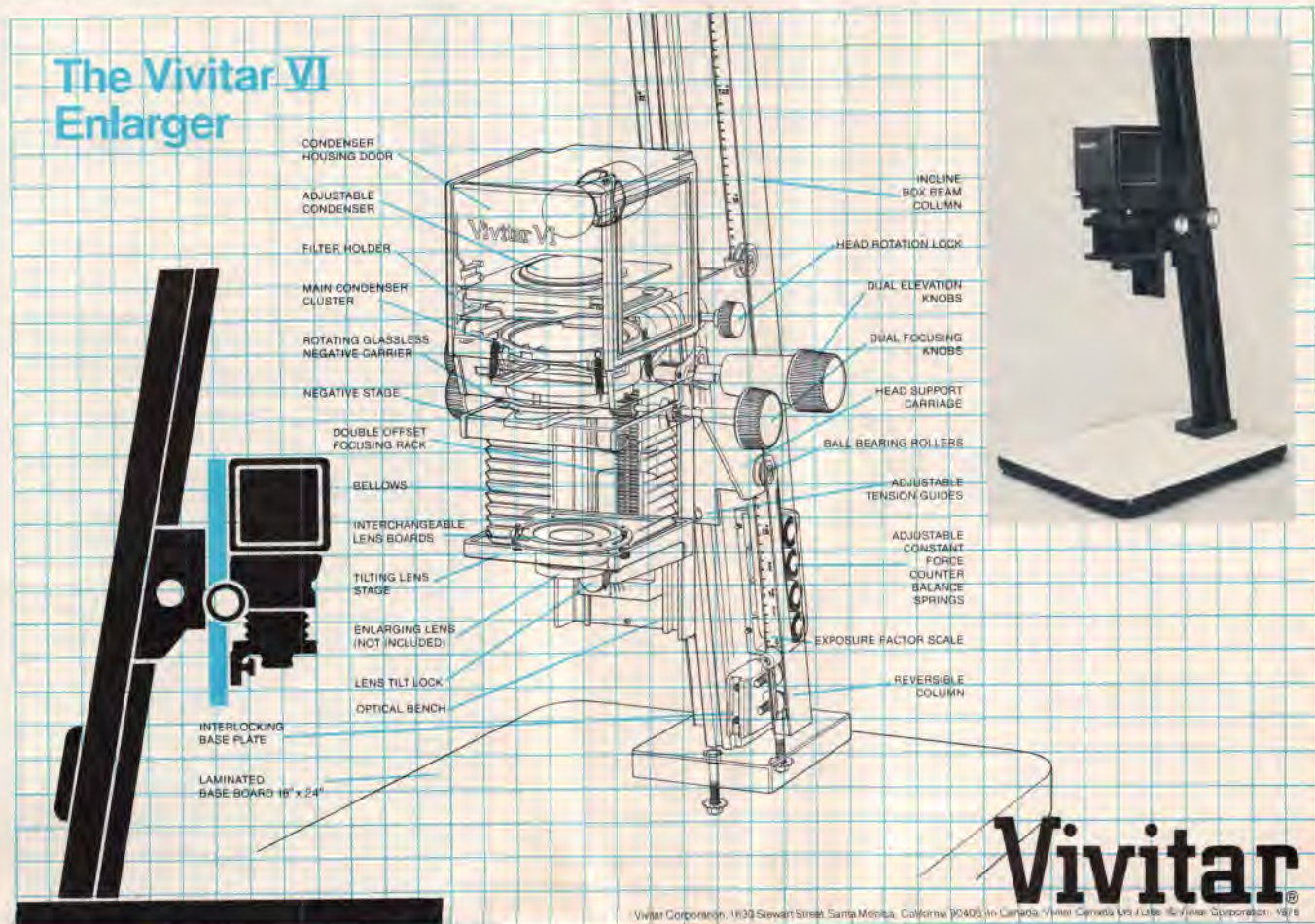
springs equalize inertia at all points on the column. There's no slippage, no backlash. Southpaws will appreciate the ambidextrous design... it has both right and left hand focusing and elevation controls. All the optical components are aligned on a heavy column of their own, like a vertical optical bench. The XL column is standard as is the oversized baseboard which allows 16" x 20" prints from 35mm format, two features considered optional extras on some enlargers.

The Vivitar VI will satisfy the most exacting black and white printers including compulsive dodgers and burners and zone system perfectionists. If the bulk of your work is black and white but you occasionally try your hand at color, you can

use an inexpensive color filter pack and get the crisp, saturated color prints only a condenser enlarger can produce. If you find yourself working more with color, you'll want Vivitar's Dioptic™ Light Source. Unique technology makes it the most sophisticated color head you can buy... it's no exaggeration to call it the color head of the future. Check it out for yourself at your Vivitar dealer.

But remember that the Dioptic Light Source can be used only with the Vivitar VI enlarger, so make sure you buy the only enlarger that can grow from a perfectionist's black and white model to an equally high-quality color unit.

Black and White and color, damn the compromises. Full speed ahead.



LEARN TO TAKE PRIZE-WINNING PHOTOS IN A FLASH.



NOW! Make each of your photos a winner with Photographic's "HOW TO ENTER AND WIN PHOTO CONTESTS". It's everything the beginner and advanced photographer needs to know about entering the profitable photo market. Features include: The background and procedures of making winning photos. An in-depth section on "Protecting your Interest". Types of films to use whether color or black & white. A special chapter on photo equipment to get that winning effect, plus how to arrange your photo files

Before you enter a photo contest make sure you'll come out a prize-winner with Photographic's "HOW TO ENTER AND WIN PHOTO CONTESTS"—the book preferred by serious photographers.

At newsstands and photo dealers everywhere, or use the handy coupon below. It's a real value for \$1.95!

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Allow 4-6 weeks for delivery.

PRODUCT PROOF SHEET

(Continued from page 28)



A NEW PRODUCT FROM OLYMPUS

Olympus Camera Corporation is introducing two new remote cords for the OM system. The two new cords are 1.2 and 5 meters in length for the operation of the OM Motor Drive 1 and OM Rapid Winder 1 via remote control. The suggested list prices are \$6.15 for the 1.2-meter cord and \$9.85 for the 5-meter cord. For more information contact Olympus Camera Corporation, Crossways Park, Woodbury, New York 11797.



NEW BERG RETOUCHING KIT

The new Berg 'Touchrite' kit is designed for retouching black-and-white resin-coated papers. Formulated for all black-and-white papers and negatives as well as color photos, the kit contains three one-ounce liquid colors in plastic bottles, and a white plastic palette. 'Touchrite black and gray are transparent colors and 'Touchrite white is opaque and contains special brighteners. The three colors can be blended with each other and with water, and may also be used with the Berg Color Retouching Kit. Suggested list price for the kit is \$3.95. For more information contact Berg Color Tone, P.O. Box 16, East Amherst, New York 14051.

(Continued on page 91)

A NEW GENERATION



When we promised a "New Generation" of photography with the introduction of the AE-1 in 1976, you could only guess at the spectacular world of electronic SLR photography to come. You could guess. But we knew.

Now there's the Canon "A" System of photography. A group

of cameras and accessories offering the most advanced, reliable and cost efficient performance available in photography today. With almost all major components of the system interchangeable

among the three cameras. And with all three cameras using the forty Canon FD lenses and hundreds of Canon SLR accessories that have justly earned their reputation for excellence.

The scope of the Canon "A" System is unbelievably dynamic, unmistakably superior. It's for whatever kind of photography you are doing now or plan to do in the future. And it deserves a long and careful look.



Speedlite 155A

Automatic flash sets aperture and speed on the A-1 and AE-1; speed on the AT-1.

Speedlite 199A

Automatic flash sets aperture and speed on the A-1 and AE-1; speed on the AT-1. More power, plus bounce and 24mm coverage.



Databack A

Interchangeable with the back of any "A" System camera. Records date, data as you shoot.

Power Winder A

The perfect compact motorized film advance. For single shots or sequences at up to 2fps with any "A" System camera.

Motor Drive MA

The heart of the A-1's fabulous new motor. Compact, rugged. Professionally competent.

Battery Pack MA

For an incredible 5fps top speed with the Motor Drive MA Basic Unit. Plus unique "instant high speed" switch for 5fps from any other mode.

NiCd Pack MA

Rechargeable, compact and light weight. The ideal replenishable power source for the Motor Drive MA.

FD Lens

USING THE A-1



The new Canon A-1 is more than just the most advanced single-lens reflex camera in history. More than a technological curiosity. It's a system approach within a single camera. An unmatched vehicle for the solution of the most complex

photographic problems with a truly remarkable simplicity in almost any case. And the heart of the A-1 is its six-mode exposure flexibility. That puts an end forever to arguments about which exposure mode is best in an automatic SLR by simply giving you everything.



AT Dial
Aperture priority shows pre-set aperture.

Shutter Priority
shows pre-set speed.

Shutter-priority automation lets you select the speed you want to freeze action, prevent camera motion or purposely blur for dramatic impact. The A-1 selects the proper aperture in milliseconds.

Aperture-priority automation gives you total control over depth-of-field or lets you pick the aperture you prefer best. The A-1's shutter adjusts steplessly to give perfect exposure in any light.

Programmed automation is the A-1's unique all-purpose automation mode. It's great for shooting from the hip, adjusting aperture and shutter *both* over the camera's entire sensitivity range. And in an unmanned application it will continue to give correct exposures even when the lens' maximum aperture has been reached by adjusting for the correct shutter speed.

Stopped-down aperture priority makes the A-1 a truly universal camera, giving aperture-priority automatic exposures with anything you can mount on the camera—telescopes, microscopes, pre-set lenses, bellows and extension tubes. Anything.

Flash automation with the A-1 is absolutely the simplest anywhere. With either the Speedlite 199A or 155A all you do is mount the unit and turn it on. When the ready light is on (shown in the viewfinder) your aperture and shutter speed are automatically correct. If you shoot before the flash recycles, the A-1 reverts to regular auto exposure.



Manual exposure is just what the name implies. You set aperture and shutter speed for studio flash, special jobs or unusual applications—if there are any you can find that the first five exposure modes won't cover.

But the A-1's spectacular exposure control is only the beginning. Inside, all information is handled in

Six-mode exposure control. System versatility. Newer electronics for wider applications.



AT Dial/AE Mode Window/
Shutter Release Button



Eyepiece/
Eyepiece Shutter Lever



Battery Check Button/
Viewfinder Display Lever



ASA Film Speed Scale/
Exposure Compensation
Lock Button



Self-Timer Settings/
Multiple Exposure
Lever



AT Dial Guard



Exposure Memory
Switch/ Exposure
Preview Switch



Stopped-Down Lever



THE OFFICIAL
35MM CAMERA OF
THE 1980 OLYMPIC
WINTER GAMES

Canon A-1

digital form. Which means it handles a greater amount of information (that's why it has such exposure capability) as well as giving you a totally digital LED readout in the finder. A readout that's invisible until you turn it on and can even be shut off—while still letting the A-1 operate automatically. A readout that gives you a 7-LED display and tells you everything the A-1's doing. Changing every $\frac{1}{2}$ -second as the light changes. And varying in illumination intensity as the light varies. There's never been anything like it.

There's never been a camera that's handled like the A-1, either. All exposure functions can be controlled by the single AT dial, which locks to prevent errors. Different exposure modes are shown by symbol and color code, and only the appropriate scales are visible in each mode.

Exposure can be corrected as much as ± 2 stops in $\frac{1}{2}$ stop increments and an exposure lock helps with really difficult lighting situations.

There's also a two-speed self timer, easy multiple exposures and a host of other control features that are a pure delight to use. With the new Motor Drive MA's smoothness and versatility (up to 5fps with Battery Pack MA) the A-1 is ready to handle any photographic challenge.

Whether you want to use the A-1 as a focus and shoot automatic SLR or explore the technological miracles it can perform, one thing is certain. You won't find anything like it anywhere for a long, long time.

USING THE AE-1



This is the one that started it all. A veritable flood of imitators. Yet the performance and cost efficiency that has made the AE-1 the *number one selling camera of its type* in

the world are still at work helping make it the most sought-after camera anywhere.

In your hands the AE-1 is a compact marvel of thoughtful engineering with the security and ease of shutter-priority automation. Most photographers agree that this type of automation is best for most photographers under most situations. The reason we could put it into the AE-1 comes down to foresight on the part of our FD lens designers. When you have the right lens mount, you don't *have* to build aperture-priority automation into your cameras. But that's another story.

The AE-1 is a model of direct, uncluttered photographic operation. Shutter speeds fall under your right index finger and apertures selected are clearly visible in the bright, easy-to-focus viewfinder. You can preview your exposure either with the shutter button or a special switch that falls under your left thumb. Just above this switch is a ± 1.5 stop exposure correction button that's just perfect for typical backlit situations.



Used with either the Speedlite 155A or new 199A, the AE-1 is *the* most automatic flash SLR ever. When the units' ready lights are on, your shutter speed is set to 1/60 sec. (no matter *what* the dial is actually set on) and your *aperture* is automatically set to the proper exposure for the distance range selected. All you do is mount the unit, switch it on and you're ready for perfect flash

The first computerized, shutter-priority automatic SLR. The last word in value.



Electromagnetic
Shutter Release Button



Shutter Speed/
ASA Dial



Camera Control/Display
Compensation button



Alternate Meter
Switch/Exposure
Compensation Button



Stopped-Down
Lever



THE OFFICIAL
35MM CAMERA OF
THE 1980 OLYMPIC
WINTER GAMES

Canon AE-1

exposures. And if you shoot before the ready light is on, the AE-1 will make a correctly exposed image in the normal auto exposure mode.

The AE-1's automatic operation is enhanced even further by the operation of the optional Power Winder A—a simple auto winder that can shoot single frames or sequences as fast as 2fps at speeds above 1/60 sec. The reason that the Power Winder is so simple—read reliable—is that most of the brains for its operation are in the electronics of the camera.

If compact, automatic, state-of-the-art electronic performance at an almost incredible price is what you're looking for, you'll find it in the AE-1.

USING THE AT-1



If you remember when through-the-lens metering shook the photographic world, you'll love the AT-1. It's the classic through-the-lens match-needle metering camera with a twist. Because it shares the technology of the "A" Series of Canon SLR's, it has up-to-the-minute performance features that bring this traditional photographic format into the present with a bang.

In use it's almost as simple as the AE-1, with a bright viewfinder and fast, accurate needle centering. And it shares the "A" Series compactness, great handling and light weight. But what's really exciting about the AT-1 is its access to the great "A" Series of Canon accessories.

With the AT-1 you get to use the Power Winder A for singles or sequences and both Canon Speedlites, the 155A and 199A. On the AT-1, they set the speed automatically, you set the aperture. And the Databack A gives you date/data recording at the press of the shutter, interchanging with the camera back with a simple press of a button.



If match-needle metering is the way you like your photography—but you don't want to sacrifice modern performance—the AT-1 is just what you need.

THE WHOLE PICTURE

Of course, the Canon "A" System is part of something a lot bigger—the whole Canon system of SLR photography. In it you'll find



forty of the world's finest lenses. Everything from Fish Eye to Super-Telephoto. And everything in-between. Lenses that have set standards for sharpness, contrast and freedom from aberrations. As well as ruggedness and innovation. Plus a line of accessories for almost every conceivable photographic job under almost any kind of conditions.

Whatever you're planning to do in photography, whatever you've done, you'll see things differently through the Canon "A" System of cameras and accessories. It's truly a New Generation of photographic performance. See it soon at your local camera specialty dealer's.

Match-needle metering with electronic flexibility. Conventional photography redefined.



Electromagnetic
Shutter Release Button



Shutter Speed/
ASA Dial



Meter Switch



Stopped-Down Lever



THE OFFICIAL
35MM CAMERA OF
THE 1980 OLYMPIC
WINTER GAMES

Canon AT-1

Canon USA, Inc., 10 Nevada Drive, Lake Success, New York 11042; Canon USA, Inc., 140 Industrial Drive, Elmhurst, Illinois 60126.
Canon USA, Inc., 123 Paulmar Avenue East, Costa Mesa, California 92626; Canon USA, Inc., Bldg. B-2, 1050 Ala Moana Blvd., Honolulu, Hawaii 96814; Canon Optics & Business Machines Canada, Ltd., Ontario.



GALLERY '79

□ The photographs on these pages were taken by photographers of professional caliber. If you feel your photographs are of similar quality, send us the evidence (along with a stamped, self-addressed return mailer—in case we don't agree). PhotoGraphic will consider either black-and-white or color photographs submitted according to the following guidelines:

Black-and-white: There is no limit to the number of prints you may submit to Gallery '79, but they should be no larger than 11 × 14 inches and unmounted. Prints with white borders are preferred. Your name and address and all pertinent data must be printed on the back of each picture.

Color: We will accept no more than five color transparencies from any photographer for consideration. To submit slides, print your name on each slide mount and enclose all equipment and exposure information on a separate sheet of paper. Color prints must be at least 3½ × 4½ inches in size, on glossy paper.

Also, for any photograph in which a person or persons can be identified, the picture must be accompanied by a signed release from each recognizable individual. PhotoGraphic will pay \$25 for each picture published. Prints and transparencies are accepted for one-time use and will be returned after publication date. □

1. P. Connell took this photograph with Kodak Plus-X Film in his 4x5 camera with a 135mm Schneider lens. Exposure was not recorded.
2. Harry W. Wood created this photo using a Mamiya RB67 camera and 50mm lens. Film was Kodak Tri-X Professional Film. Exposure was 1/22 at 1/60 with flash.





4



5

GALLERY '79

1. Henry T. Gurley took this shot of the governor's reflecting pool in Houston, Texas on Kodak Kodachrome 64 Film. He used a Yashica AX camera with a 40mm Steinheil Casseron lens to expose film for approximately three seconds with an aperture of $f/3.5$.

2. "Frost on a Living Room Window" is the title Robert L. Feldman gave this wintry vision. The scene was shot with a Minolta SR-T101 camera and a 55mm Rokkor lens on Kodak Ektachrome-X Film.

3. John Kirsch used a Nikon F2 and a Nikkor 24mm lens to capture this dramatic rural scene in Galena, Illinois. The scene was photographed on Kodak Kodachrome 25 Film using a shutter speed of $1/60$ and aperture of $f/5.6$.

4. "Sweeping Sails" by Jerry J. Ahnert is an etch-bath color posterization of an Ektachrome original. Posterized and colored litho separations were sandwiched with the original slide. The photograph of this 83-foot sloop was taken with a Nikon FTN and a 43-86mm Nikkor zoom lens.

5. Alan Goland captured the muted tones of Catalina harbor at dusk in this study. Goland used a Nikkormat FTN with a 50mm Nikkor lens and Kodachrome 64 film. Exposure was not recorded.

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BASIC 35MM SINGLE-LENS REFLEX PHOTOGRAPHY

BY BILL HURTER AND MIKE STENSVOLD

Getting your first 35mm single-lens reflex camera is a truly exciting moment. Learning to use your new camera can be equally rewarding, *provided* you have some expert guidance. For all the refinements found in today's SLR's, the fact remains that these cameras are complex, precision optical instruments. Unlike the box cameras of old, there are certain basic techniques used in everyday camera operation that, if followed, will yield maintenance-free enjoyment of your camera and top-quality photographs.

"Basic 35mm Single-Lens Reflex Photography" offers some basic tips on properly operating a 35mm SLR. Messrs. Hurter and Stensvold (Mr. Stensvold is the studious-looking one in the photographs) will be passing along helpful advice by sharing their expertise on a variety of subjects from basic camera handling to basic shooting techniques. All of the information will be tempered

with an awareness of the latest camera technology as well as the notion that using a 35mm SLR should be both fun and easy. After you read our first effort, we hope you agree.

We should probably mention here that your camera may differ from the one shown in our illustrations in the placement of various features. So, before ripping the magazine to shreds when you can't locate the rewind button on the bottom of your camera, consult your camera's instruction manual, which will tell you the location of the different features of your camera and the proper way to use them. Speaking of instruction manuals, our piece might just make a good companion to your instruction manual, for what we have tried to do is to answer some of the practical questions most manuals skim over or ignore completely.

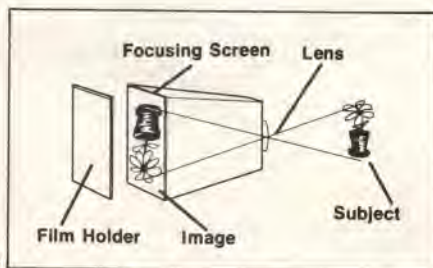
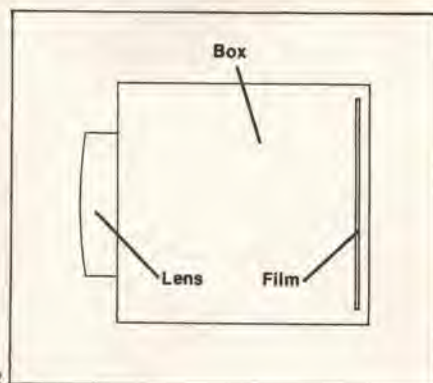
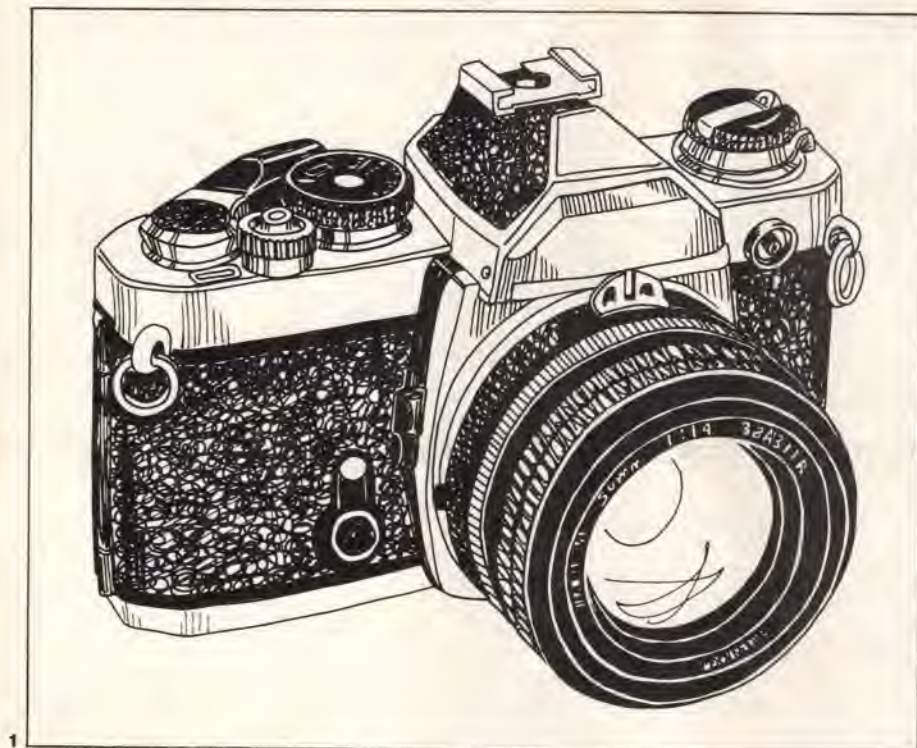
We hope you will find this feature helpful and maybe even instructional in

learning how to properly use your 35mm single-lens reflex. For you old-timers, perhaps our ramblings and photos will help eliminate some bad habits and foster some better ones. Anyway, we'll try.

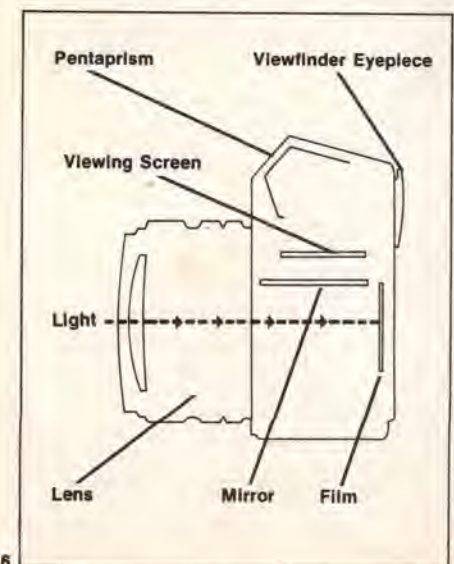
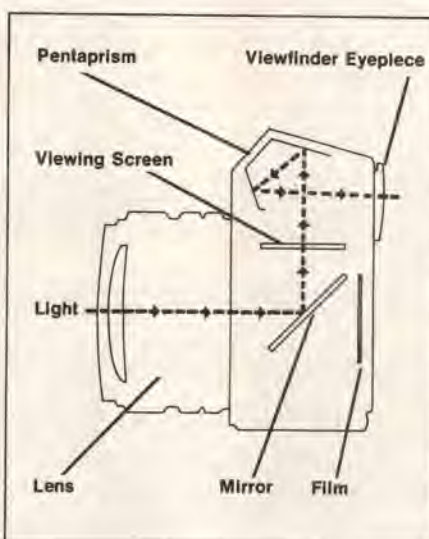
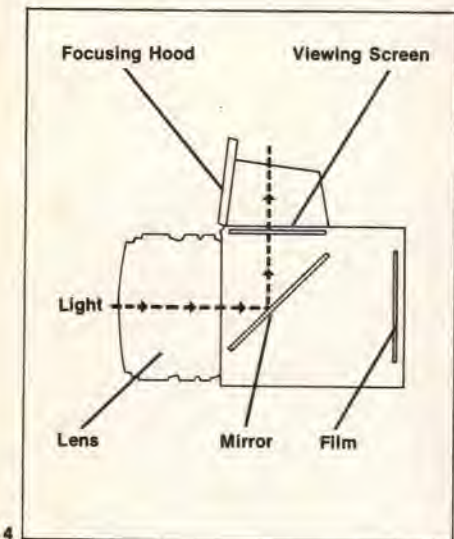
(We'd strongly recommend that you follow the steps in order. Get familiar with the feel of your camera—how to hold it, how to focus it, how to operate the shutter release button, and how to use the meter—before you put any film in the camera. This way, you won't waste a lot of film making silly mistakes that we all tend to make as we learn.)

When you do finally get to putting film in your camera, we'd recommend using a fast film such as Kodak Tri-X or Ilford HP5, because such a fast film will allow you to use fast shutter speeds, thereby reducing the chance of blurred pictures due to camera movement as you continue to get the feel of your SLR.) □

CAMERA HANDLING:



WHAT IS A 35mm SLR?



1. Today's 35mm single-lens reflex (SLR) camera is the most convenient and versatile type of camera for general photography.

2. To see just what an SLR is and why it is so great, let's first see what a camera is. A basic camera is just a box that keeps light from hitting the film until we want it to, and holds a lens in place so we can sharply focus light rays on the film. The big drawback of such a box camera is that you can't see exactly what is going to be recorded on the film.

3. A view camera has a groundglass focusing screen on the back, upon which the lens' image is projected so you will know exactly what will appear on your film when you take the picture. The drawbacks of this type of camera for general photography are: 1. The image projected by the lens onto the groundglass viewing screen is upside down; and 2. Once you place the film holder in the camera, you have a box camera again—you can no longer see what will be in the picture.

4. In the single-lens reflex camera a mirror deflects the light rays coming through the lens upward onto a groundglass viewing screen, allowing you to see just what's going on until the moment you push the shutter button. The drawback here is that, due to the mirror, the image you see is reversed—the left side of the scene appears to be on the viewfinder's right side.

5. All of today's 35mm SLR's have pentaprism viewfinders, which straighten out the image so that you see it as it is—top side up, left side left and right side right. With the 35mm SLR, you view the image through the lens exactly as it will be recorded on the film.

6. With that mirror in the light path, you might well wonder how the light gets to the film when you take a picture. Well, when you push the shutter button, the mirror flips up out of the way, allowing the light to pass through to the film.

With some larger-format and older 35mm SLR's, the mirror stays up (meaning you can't see anything through the viewfinder) until you recock the camera, but with today's 35mm SLR's the mirror is of the instant-return type that snaps back down into viewing position as soon as the exposure has been made, so that your view through the viewfinder is interrupted for only a brief moment.

7. OK, now you know what SLR means. The 35mm designation simply means that the camera uses 35mm film, which comes conveniently packaged in 20-, 24- or 36-exposure cassettes. The 35mm film is 35mm wide; that's why it is so designated.

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If you're like most photographers, you love a new piece of equipment. Especially a new 35MM SLR. You can't wait to pick it up and put your first few rolls through it. The excitement you feel and the camera's precision add up to an unforgettable



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7. A list of major prize winners will be available after September 15, 1979. Send a stamped, self-addressed envelope to Photographic Super Sweepstakes Winners, Ventura Associates, 101 Park Avenue, New York, N.Y. 10017.

CAMERA HANDLING:



HOW TO INSTALL THE BATTERY

1. The first thing you should do with your new SLR is install the battery because if you don't, the camera's light meter won't work. (With some cameras the shutter won't work either.) Make sure that you have the correct battery (the camera's owner's manual will tell you which one to use). Batteries look pretty much alike, but they aren't, and using the wrong one can cause incorrect metering, an inoperative camera, or even damage.

2. The battery compartment is generally found on the camera's baseplate. The battery cap can be removed by inserting a nickel in the slot in the cap and unscrewing it. (If your new SLR cost you your last nickel, you can always use a penny.)

3. It is important that the battery be properly oriented. There is usually some indication of which way the + (positive) face of the battery should go, marked on the cap or in the battery compartment. Don't touch the + or - faces of the battery, or poor contact may result; handle the battery only by its edges.

4. Here's a handy hint: Using a nail or needle (not a pin, which is too soft), scratch the proper battery type designation onto the inside of the battery cap. That way, if you lose the owner's manual, you'll still know what kind of battery to replace a dead one with. (Some batteries do not have their designation marked.)

5. Some cameras use two or more batteries. Make sure that all are properly oriented. Here the two + sides of the batteries are facing each other; this is wrong, and the camera's meter will not work until the batteries are properly installed.

6. With the battery properly oriented, replace the battery cap and tighten with the nickel.

HOW TO HOLD A 35mm SINGLE-LENS REFLEX CAMERA

1. The next step in learning how to use your new SLR is to learn how to hold the camera properly. Here is a steady way to hold it, cradled in the left hand. If the camera is not held steady during exposure, unsharp photographs will result.

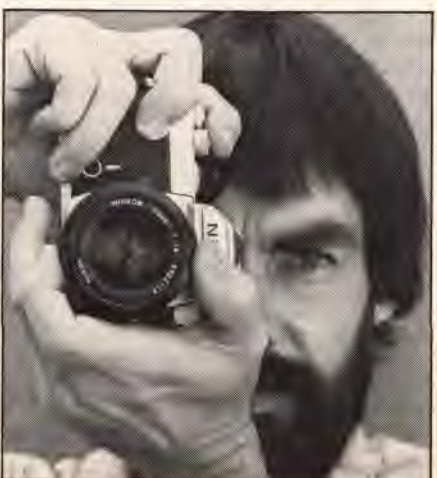
2. The right forefinger is used to operate the shutter button, and the right thumb is placed under the camera so that it directly opposes the downward pressure on the shutter button.

3. Many photographers hold the camera like this. If you use your right eye to look through the viewfinder, this left-hand position is fine, but positioning the right thumb behind the camera instead of beneath it to offset the pressure on the shutter button makes for less-steady shooting.

4. If the right thumb is positioned behind the camera, there is nothing to oppose the downward pressure on the shutter button, and slight camera movement may result.

5. The camera is braced against the forehead to steady it, but there is no need to give yourself a headache. Gentle pressure is sufficient.

6. The left hand provides a sturdy platform to support the camera.



7. The shutter is released by gentle pressure (not a "push") on the shutter button, preferably with the tip of the finger.

8. The lens is focused by turning the focusing ring with the thumb and first or second fingers of the left hand.

9. The same basic principles apply to holding the camera in the vertical position. The left hand supports the camera body, and the left thumb and forefinger focus the lens.

Keeping the eye that isn't looking through the viewfinder closed will help you concentrate on what you see in the viewfinder, especially when you first start to use an SLR. Later, as you get used to seeing through the viewfinder, keeping the nonviewing eye open will help you to reduce eyestrain.

10. When holding the camera vertically, the right hand is braced against the forehead to steady the camera. For both vertical and horizontal shooting, the elbows should be kept in close to the body for maximum steadiness.

11. The best way to carry the camera on a neckstrap is like this. This way it is ready for instant use. If it is carried over the shoulder on one side, it is more difficult to bring up to shooting position in a hurry. When moving, keep one hand on the camera to keep it from swinging into something.

12. A very steady "tripod" can be made from a neckstrap by twisting it around your left arm as shown, then taking up the slack on the other side with the right hand.



CAMERA HANDLING:

HOW TO PROGRAM THE METER

1. Now that you have the battery installed and know how to hold the camera and operate the shutter button, it is time to program the camera's light meter so that it will provide proper exposure for the type of film being used. This is done by setting the camera's ASA index to the ASA speed of the film you will be using.

ASA speeds are a measure of the film's sensitivity to light—the more sensitive, the higher the ASA number—and are assigned based upon standards established by the American Standards Association (ASA, now known as the American National Standards Institute, or ANSI). ASA speeds provide a standard of consistency among film manufacturers. If one film has an ASA speed twice as high as another film, the film with the higher ASA speed is twice as fast—you can use one shutter speed faster or one lens opening smaller in the same amount of light as with the slower film. The significance of this will be discussed fully in a later article in this series.

2. The film's ASA speed can be found in several places: on the film cassette, on the film instruction sheet, and on the film box. In this case, the film's speed is ASA 32.

3. Sometimes the camera's ASA index dial doesn't have room for all the possible ASA speeds, so dots are used in place of some of the numbers. This drawing shows what ASA numbers these dots represent.

4. Now you are ready to practice focusing and metering. To operate the focusing ring on the lens, just turn it one way or the other until the image in the viewfinder appears sharp. Don't see-saw; your eyes are less able to judge focus accurately when you do that.

5. Many 35mm SLR's have split-image focusing screens. With these, just aim the center circle at a straight portion of your subject, then turn the focusing ring until the split image becomes whole.

6. Some 35mm SLR's have microprism focusing screens. With these, turn the focusing ring until the shimmering image in the center circle becomes sharp. It might be easier to tell when the image is sharpest by looking at the edges of the shimmering circle rather than at the center of it.

7. When the image is sharp in the viewfinder, you are ready to determine the proper exposure. Turn the meter on. On this camera, this is done by pulling the film-advance lever back until the red dot appears. Check your instruction manual for proper activation of the meter on your camera.

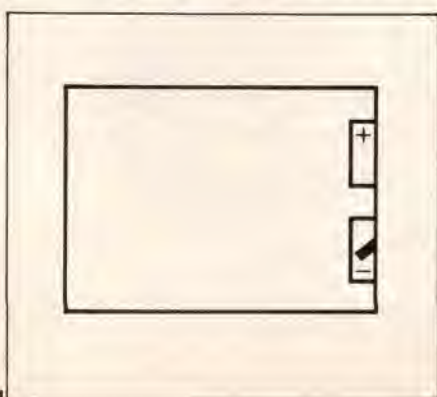
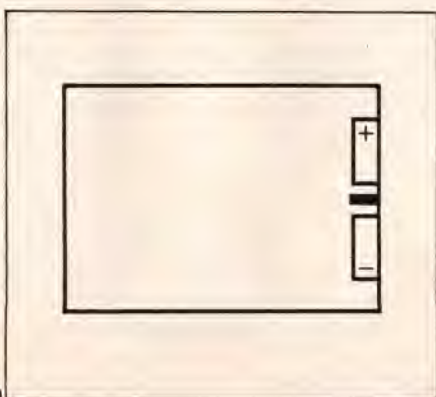
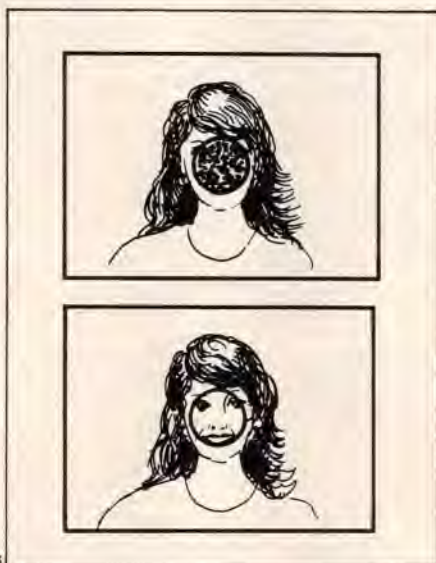
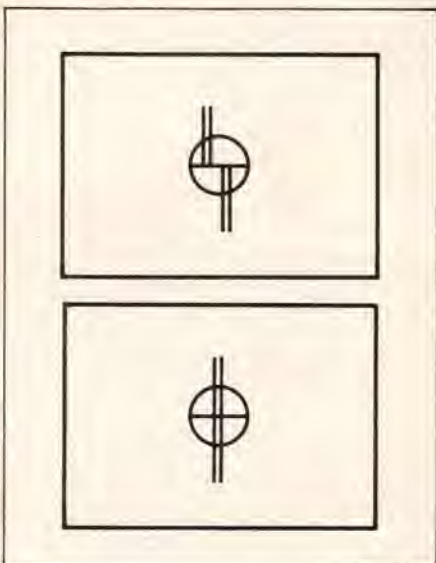
8. Set the shutter speed to the desired setting. A setting of 1/250 second ("250" on the shutter-speed dial) is a good one to use at first, because it is fast enough to reduce the effects of camera movement as you learn how to hold the camera steady during exposures.

9. Now turn the aperture ring with your left hand while watching the needle or other meter indicators in the viewfinder.

10. The idea is to turn the aperture ring until the needle in the viewfinder display centers. When it does, you've set the proper exposure.

11. If the needle indicates "-" it means that you must move the aperture ring to a smaller number. If the aperture ring is already set at its smallest number, then you must move the shutter-speed dial to a smaller number to center the needle.

12. If the needle indicates "+" it means that you must move the aperture ring to a larger number. If the aperture ring is set at its highest number, then you must move the shutter-speed dial to a higher number to center the needle.



HOW TO LOAD FILM

1. Now that you are familiar with the feel of the camera and can set the focus and exposure and operate the shutter release (and hopefully have practiced metering, focusing and making exposures while holding the camera steady), you are finally ready to put a roll of film in the camera.

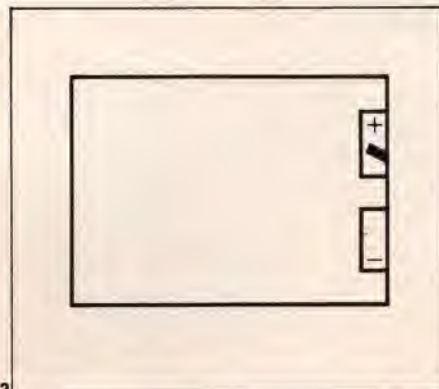
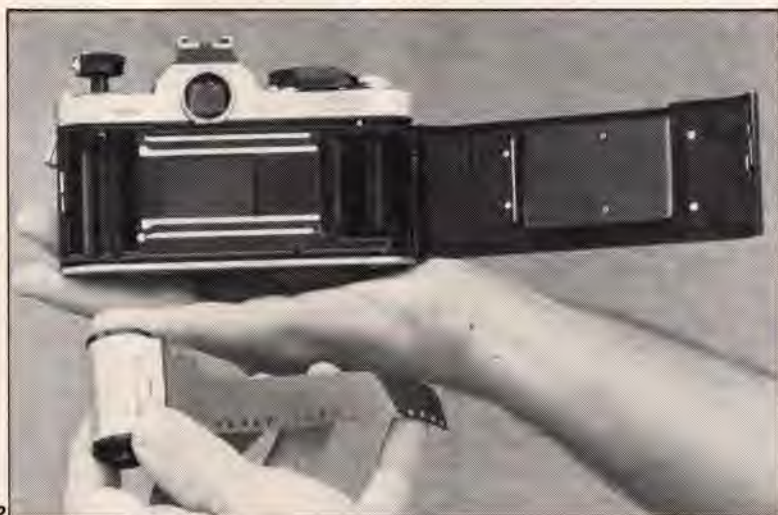
The first step in loading the camera is to open the back. On most SLR's this is done by lifting up the rewind knob as shown.

2. Holding the camera in the palm of your hand with your thumb and index finger grasping the lens barrel is a convenient and comfortable way to load film when no table or support is handy.

3. Once the camera back is open, you can drop the 35mm film cassette into the space for it below the rewind knob. Keep the rewind knob in the up position while doing this, or the cassette won't drop into place.

4. Pushing the rewind knob down locks the cassette in place.

5. The end of the film is inserted into the bottom of one of the slots in the take-up spool.



CAMERA HANDLING:

HOW TO LOAD FILM

6. Slowly operating the film-advance lever will advance the film onto the take-up spool.

7. Continue to alternately operate the film-advance lever and depress the shutter release button until both sets of sprocket holes on the film are engaged on the teeth of the film-advance sprocket.

8. Here is how the properly loaded film cassette should look.

After checking to be sure that both sets of sprocket holes are properly engaged, close the camera back.

9. Slowly turn the rewind knob in the direction indicated by the arrow until it stops. This takes up any slack in the film.

10. Operate the film-advance lever and push the shutter button (alternately) until the film counter shows "1." You are now ready to shoot your first pictures. Do this, practicing the techniques we've explained.



HOW TO UNLOAD EXPOSED FILM

1. When you reach the end of the roll of film, the camera will tell you this fact in a couple of ways. First, the film counter will indicate the number of exposures on the roll (36 if a 36-exposure roll is used). Second, the film-advance lever won't operate fully. Do not force it. It is just telling you that it is time to rewind the film.

2. The first step in rewinding the film is to push the rewind button. This is usually found on the camera baseplate.

3. Unfold the rewind crank on the rewind knob and turn the knob slowly in the direction indicated by the arrow until you feel the film pull off of the take-up spool. You can feel this by a slight increase in winding resistance followed by a loss of resistance.

4. When the film has been completely rewound, open the camera back, pull up on the rewind knob (check instruction manual for directions), and you can then remove the cassette of film for processing.



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DENSITOMETRY
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☐ Sensitometry is the measurement and evaluation of the responsiveness of light-sensitive materials. It is the technology used to control the production of camera films and to rate them. When you expose film in your camera, a latent image is created in the film's emulsion. A latent image is essentially unmeasurable; it has virtually no apparent physical properties until the film is developed. Development creates densities in the film in direct proportion to the amount of exposure any specific portion of the film received. The standardized measurement of the densities created in film by exposure and development is called *densitometry*.

This measurement of developed densities in film is the means by which the film manufacturer determines an ASA rating for the film and provides the recommended developing times and temperature specifications. The ASA rating and the data provided by the film manufacturer can only be matched in practical use if the conditions of use match the conditions under which the tests were made to rate the film. Obviously, the standards employed in film manufacturers' test laboratories are models of average photographic conditions, methods of exposure control and film development.

But most serious photographers are proud and independent creatures who don't like to think that they make photographs of average subjects using average methods of exposure control and film development. Many, choosing to work with more specific and individualized film-speed ratings and degrees of film development, employ some system of exposure and development control, zone systems being the most popular. All of these systems are based on the principles, if not the practice,

of densitometry.

To use densitometry as a method of exposure and development control, a way of measuring actual film densities is needed. The *densitometer* is an instrument designed to measure densities. A modern electronic densitometer is very much like a light meter. It contains a light-sensitive photoelectric cell activated by a built-in, controlled light source. The light source is located opposite the photoelectric cell so that film can be placed in the path of the light that reaches the photoelectric cell from the built-in source. Like a light meter, a densitometer has either a scale and indicator needle or a digital readout, which provides a numerical indication of what it is reading. When film is placed between the light source and the cell, the meter is able to read the density of the film because the cell receives a lesser amount of light. This amount is indicated on the meter in logarithmic values of density. Besides having its own light source, a densitometer differs from a light meter in that it is designed to read a narrower range of differences, identifying more minute and accurate distinctions between them.

There are three practical uses for a densitometer. First, it can be used to determine the effective film speed of a particular film developed in a given developer at a specific rate of development. Second, a densitometer can be used to measure how much contrast is produced in a negative by development in respect of the brightness range of the subject photographed. And finally, readings of the characteristic response of a film/developer combination to various ranges of subject brightness values can be used to effect a tone control system from data produced by a densitometer.

In addition to the densitometer, a gray scale (Kodak Color Separation

Guides and Gray Scale, Q-13 or Q-14) is needed to make effective film speed and development control tests of film/developer combinations. The two basic tests can be accomplished in one session. The gray scale should be photographed in the same kind of light as is normally used to make photographs (tungsten or electronic flash indoors, sunlight outdoors). Position the gray scale so it is evenly lit without any surface reflections apparent from camera angle. Set up the camera, framing and focusing on the gray scale to fill the frame, making it as large as possible.

Base your exposure reading on the .70 (M) step of the gray scale. Without a spot meter to measure this small area, use a gray card (Kodak Neutral Test Card, 18-percent reflectance) in place of the gray scale, filling the frame to make a camera meter reading. Set the meter at the ASA number designated by the film manufacturer. Since the gray scale is a small subject that requires close focusing, an exposure setting corrected for lens extension should be included in the exposure calculation. Use either the Close-Up Exposure Dial in the *Kodak Professional Photoguide* or the Lens Extension Exposure Dial in the *Kodak Master Photoguide* to determine the correction. Record your basic exposure at the ASA rating.

You are now ready to expose a roll of film. Bracket the exposures starting at least two f-stops over the reading. Make an exposure and then close the lens $\frac{1}{3}$ f-stop to make the next exposure, continuing until you have made an exposure at each $\frac{1}{3}$ -f-stop interval for at least two f-stops above and below the reading. In order to make the development control test, repeat this series of exposures on four more rolls of film. One roll should be developed at the time and temperature recommended

by the developer manufacturer for the film being tested; the other four rolls should be developed at the same temperature, but one roll each for a 15- and 30-percent decrease and a 25- and 50-percent increase in developing time.

Beginning with the "normally" developed roll of film, you now have negatives of gray scales that can be read on a densitometer to determine effective film speed. Start the readings by placing the film over the light source (a small aperture) with the emulsion side facing the photoelectric cell. The first reading should be of the film base, preferably the space between frames. Next read the negative area corresponding to the 1.90 step of the gray scale in the frame exposed at the standard ASA rating by moving that area of the negative over the aperture. If the effective film speed is the same as the manufacturer's ASA rating, this reading should be 0.10 higher density than the base reading. If, for instance, the base reading is 0.09, then the 1.90 step should read 0.19 or very close to it. If the reading is lower than desired, read the 1.90 step on the next frame. If the reading is too high, just look in the opposite direction.

When the correct frame is identified, since you bracketed at $\frac{1}{3}$ -f-stop intervals, merely count the number of frames from the standard-rated frame to find the effective film speed exposure index. If the ASA rating is 400 and the frame that provides 0.10 over base density required $\frac{2}{3}$ f-stop more exposure than the ASA rated frame, then the effective film speed exposure index (E.I.) would be 250.

After recording these readings, only one more reading is required to produce data for calculating the contrast index measure of negative contrast. For this reading use only the frame found to represent



Until recently, densitometers, due to their high cost, have been used almost exclusively by the lithographic industry, processing laboratories, and a handful of professional photographers. But with the introduction of the R.H. Products densitometer at \$185 direct from the manufacturer, many more photographers can afford having this important aid to precise photographic control. This new densitometer is intended to provide transmission readings of black-and-white film densities. It features a density range capability of 0.0 to 3.0 in two scales read on one large meter using either the low range (0.0 to 1.0) or the high range (1.0 to 3.0).

The unit measures 10 inches deep x 10 inches high x 8 inches wide, with an 8x8-inch working

surface. A CdS photoelectric cell is used in a hinged arm to measure light from a 0.125-inch aperture in the center of the working surface. An adjustment of the light source level on the right side permits easy zeroing of the meter. The unit is guaranteed for one year, and the ten-percent accuracy claim of the manufacturer is decidedly conservative. A sample instrument was checked against a Kodak calibrated step wedge and negatives with gray scales previously read by a much more expensive densitometer. The unit tested varied less than five percent from established figures and had a repeatability error of less than two percent. Inquiries and orders may be addressed to R.H. Products, 3212 Skycroft Drive, Minneapolis, Minnesota 55418.

normal grade of paper a negative density range of 1.05 to 0.80, by Kodak's standards, is required, depending on the type of enlarger used. The corresponding contrast-index range is .55 to .42. The lower figure is an appropriate contrast level for most condenser enlargers, and the higher is for tungsten-type diffusion enlargers, with cold-light types falling in between. By reading and calculating the contrast index for the other rolls of film, over- and underexposed, a range can be established from which an exact developing time can be selected to achieve a density range ideal for a particular paper and enlarger.

The only variable left to bring under control using the densitometer is the range of subject brightnesses encountered while making actual exposures. The gray scale simulates a normal subject range and in sunlight measures five-

plus f-stops with a spotmeter. In practical situations the subject range may be more or less than that of the gray scale. On top of that must be added the ratio between the areas of the subject in direct light and the areas in shadow, or the light ratio. This total subject brightness range is most easily measured with a light meter in f-stops and converted to a ratio figure, 1:2, 1:4, 1:8, 1:16 per f-stop, and so on.

Using white and black cards in conjunction with a gray card, these ratios can be simulated for a series of exposure and development tests. Use the gray card lit half by direct light and half in the shade to read the exposure base. Set the white card in full light, the black in shade and read each to determine the ratio. Bracket two rolls of exposures of each setup and develop the film. Save the second roll from each exposure test to refine the development time. Read the negatives as before, first for effective film speed using the film base and the area corresponding to the black card. Then, on the frame identified as the correct effective film speed read the area corresponding to the white card and calculate the density range.

If the density range produces a contrast index suited to your printing paper and enlarger, you have found the developing time and exposure index for that scene-brightness ratio. If not, adjust the developing time and process the second test roll. When you have determined an exposure index and developing time for each light ratio, you have accomplished a complete system for black-and-white tone control. And the usefulness of the densitometer does not stop here. It should be used to monitor negatives made under practical conditions, to establish standards for other film/developer combinations, and to integrate new cameras and lenses into your system. □

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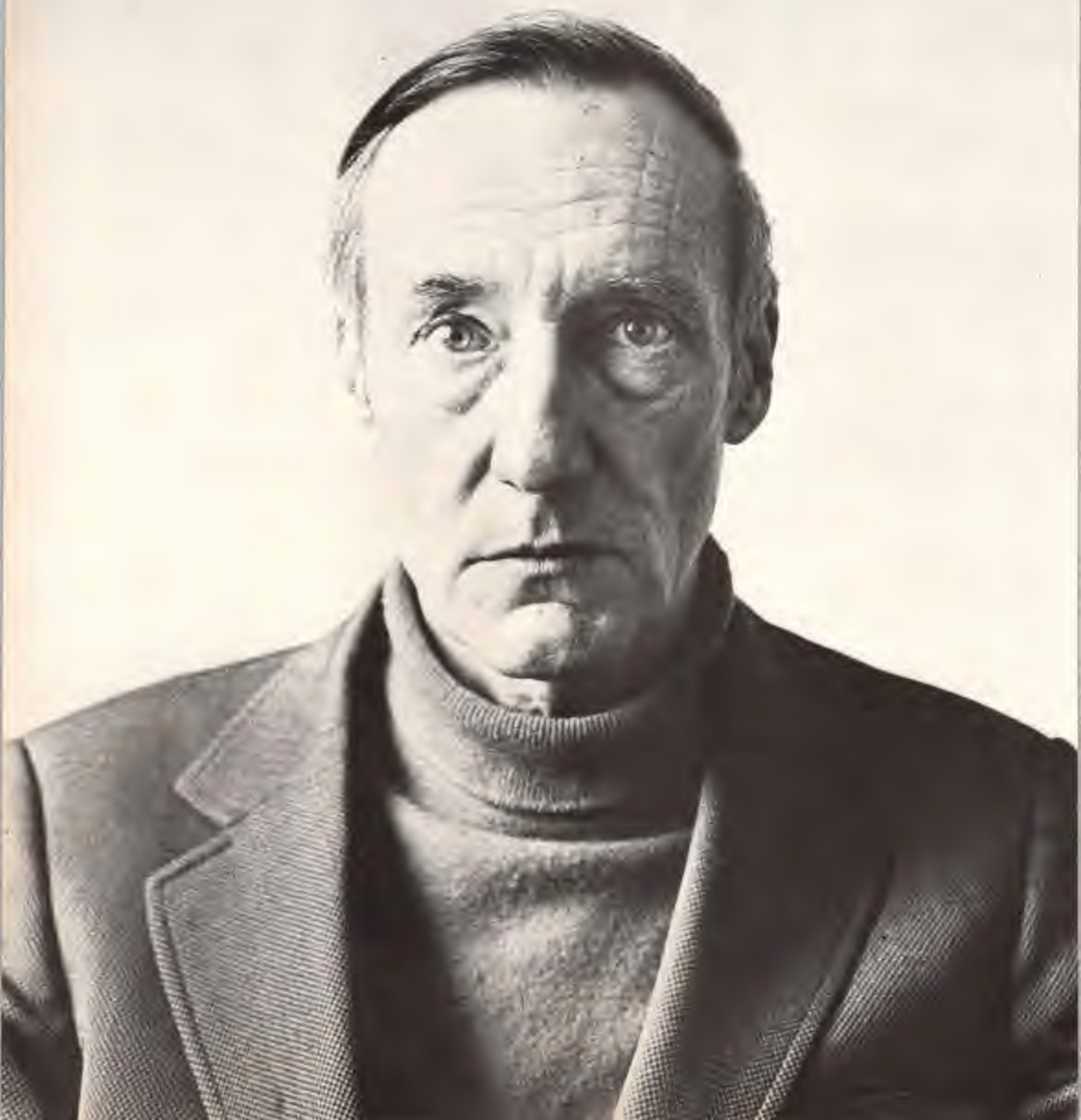
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TWELVE TIPS FOR BETTER PORTRAITS

PICTURE YOUR SUBJECTS AS THEY SEE THEMSELVES

BY CHARLES GATEWOOD



The greatest portrait photographers seek to create more than a flattering likeness; they draw upon their skills and experiences to reveal something of each subject's character and feelings. They work to establish a relaxed rapport and to gain their subject's confidence and cooperation so that together they can create an intimate, expressive photograph illustrating something deeper than a nice smile or an expensive suit. Often a good "psychological" portrait reveals as much about the photographer as it does about the subject.

NOTICE VISUAL PERSONALITY CLUES

Photography is especially suited to portraiture. Place a painted portrait and a photographic portrait of the same subject side by side and consider the differences. Which is more realistic? Which is more immediate and direct? Of course a skilled portrait painter can use his brushes to capture many subtle nuances of feeling, creating a mood that matches the personality of the sitter. The photographer, however, can record these same feelings directly and instantly. He can explore many different moods and feelings in the same shooting, and he can experiment with different poses, angles, framings and lighting techniques.

A person's face and body mirror his feelings in countless ways. His clothing is also a subtle form of personal expression. Photography can capture and express these attitudes, postures and personal details in an instant because body language and facial expression are extremely communicative. Good portrait photographers sense this non-verbal communication and frame it at its expressive peak.

How, then, does one go about making sensitive psychological portraits? While an interesting subject helps enormously, we are not always blessed with one who is colorful and extroverted. Many of our portraits depict very ordinary people who tend to be stiff and shy. How do we bring out the real Mary Smith, the essential John Jones?

ESTABLISH RAPPORT

Portrait photographers agree that the single most important factor in portraiture is establishing a good rapport with the subject. It is possible to take interesting, revealing portraits without the cooperation of the subject, but the fact is that most good portraits are collaborations. The photographer must put the

subject at ease and gain his confidence. He does this, first of all, by appearing relaxed and confident himself. He may play soothing music, serve drinks or refreshments, or do whatever he can to make the subject feel welcome, relaxed and important.

Whenever possible, the shooting should be conducted under natural circumstances, wherever the subject feels most relaxed. This may mean leaving the studio to photograph by natural light, such as sky light or window light, or it may mean an informal portrait session in the subject's own home. Also, an hour of sitting around the kitchen table, just drinking coffee and talking, may be required before the first frame is exposed.

A good portrait photographer takes all the necessary steps to get acquainted with his subject before a shooting and shows a genuine personal interest. He relates informally and personally to his subject, calling him/her by first name. Finally, he encourages his subjects to talk about how they would like to be portrayed; their ideas might prove very useful during the shooting session.

PLAN AHEAD

A good photographer also plans ahead, anticipating the special demands of each shooting. If the shooting is outdoors, he must be prepared with a mental checklist of locations, backgrounds, places to change or check clothing, makeup, hair, and so on. He will probably want to tell his subjects in advance what kind of clothing to wear and which additional items to bring. Equipment must be set up, cleaned, checked, loaded, and ready to use, so equipment problems do not interrupt the shooting.

1. Some years ago *Rolling Stone Magazine* sent me to London to photograph noted author William S. Burroughs. Here, I tried to convey a sense of the sadness and pain this great writer has endured in his lifetime.

2. I was struck by the hypnotic gaze of this man, who calls himself Lord Balkin, and by his unusual facial tattoos. I posed him in front of a blowup of another tattoo, giving him a mystical, saintly appearance. Photo was shot with straight flash.

3. I met this fellow at a Halloween costume contest. I posed him in a straight frontal position and shot with flash in the dark room.

4. This jazz musician asked me to photograph him for his new record album called *The Dragon Suite*. We found a painting of a dragon in a skylit studio and shot several rolls until we found the exact pose we were seeking.



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BETTER PORTRAITS

TAKE CONTROL

The photographer must be able to control the portrait session. You cannot sit back, cameras loaded, and wait for the subject to strike exactly the right pose. Unless he is a professional model, the subject will expect to be told exactly what to do. He may have ideas of his own, but in most cases you can be sure he will require almost total direction. Are you, the photographer, prepared to direct the portrait shooting in an intelligent, perceptive and relaxed manner?

POINT OF VIEW

The next consideration concerns point of view. What exactly is the purpose of your proposed photographic portrait? Is it to render a flattering and idealized likeness? If so, particular attention must be paid to making the subject look his best or, if possible, better than life. Most commercial portrait photographers do little else. It is their business to make women appear young and beautiful, men look handsome, and children look like cute little angels. If a sitter is tired, ill, tense or in a bad mood, the shooting should be postponed. All these feelings are expressed in the face and body.

Professional portrait photographers usually use large view cameras, soft-focus lenses, and soft, subtle lighting to make ordinary people look great. They know all the most flattering camera angles. On final prints, a skilled retoucher accentuates certain features while smoothing over minor skin problems. The resulting photograph may be extremely well-made and may please the subject very much. But how many formal studio portraits are also great photographs?

Very few people can equal the idealized Hollywood image of eternal youth and breathtaking beauty, but most never stop trying. Our society places a premium on physical beauty, and most of us are reluctant to see ourselves as we really are. Honest photographs can puncture our fragile egos by showing us as ordinary mortals with wrinkles, big noses, warts, and all. In addition, a truly perceptive portrait may reveal some unpleasant psychological truths. We often see aspects of personality or behavior that are not especially attractive. Should these aspects be denied? It would seem not, but then who wants to be photographed during a revealing but unflattering moment?

Some aspects of the subject's personality are bound to be interesting



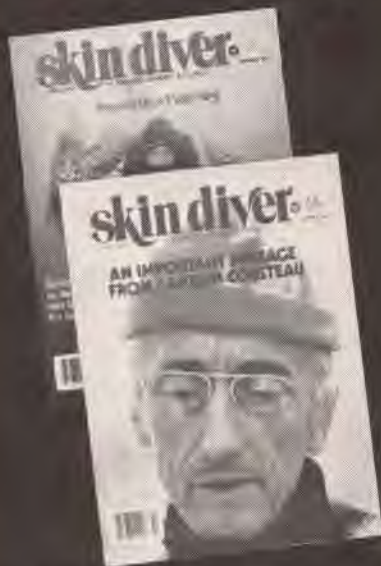
5. While photographing an all-girls' high school in New York, I was struck by the casual elegance of this young lady. I asked her to pose in the courtyard in soft, reflected light. Her relaxed manner is apparent; the pose is her own.

rather than beautiful in a traditional sense. Why try to ignore or cover up someone's distinguishing characteristics? The best photographs mirror the human condition as it is. An honest appraisal of the person you're photo-

graphing will result in a penetrating, artistic and realistic portrayal.

Each portrait photographer should examine his/her own point of view before beginning a shooting session, and he must then shape the session around that viewpoint. For example, you have asked someone to pose. What are your feelings about the subject? What kind of person is he? How can you bring out those special quali-

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BETTER PORTRAITS

ties? What do you want to say about your sitter, and what special photographic techniques—lighting, pose, camera angle, props, background, lens and film—will help you say it?

POSING STRANGERS

Are you shy about photographing strangers in public? If so, you are not alone. Street photography is intimidating for nearly everyone. The reason for the fear and anxiety is an apprehension that the subject might react negatively, perhaps even violently. You feel frustrated, torn between your desire for the picture and your reluctance to take it. What do you do?

One of the best ways to begin overcoming your apprehension is to approach the person you wish to photograph, introduce yourself, and ask if you might take his or her picture. You'll still be dealing with strangers, but with their full cooperation (assuming, of course, they agree to be photographed). This method can provide a sure-fire solution to many other problems that plague the street photographer; a cluttered background, the wrong light, and lack of control can all be corrected when you have your subjects' cooperation.

Imagine yourself walking down the street, cameras ready, looking for an interesting shot. Suddenly you see a fascinating person—let's say it's an ice cream vendor with a marvelous face and manner, wearing a big top hat. Although the light is perfect and the picture begs to be taken, you hesitate. Perhaps you are wondering if a quick candid shot would really capture the spirit of the man. You may even worry that if you get close enough to take the picture you want, the man will notice you and become just as nervous as you are. Perhaps you just don't feel right about trying to sneak a photo.

Why not simply walk up to the person and ask him if you might please take his picture? Take some time to talk with him. Get acquainted. Show a genuine interest in what he is doing, and do your best to make him feel relaxed, just as you would with any portrait subject.

He will almost certainly ask, "Why do you want to take my picture?" When he does, you should be ready to tell him that he looks very interesting in his top hat, that you are working on a photo essay on street vendors, or whatever seems appropriate. Many people are happy to pose if you are smiling, friendly, and nonthreatening.



6. This private detective had been instrumental in setting up one of the country's biggest "gun busts." On assignment for *New Times Magazine*, I asked him how he would like to pose. Taken in his kitchen, the resulting shot gives a glimpse of his cool attitude and shows us how he sees himself.

Some may refuse, of course, and others may laughingly protest, but you should be able to tell within a few minutes whether or not their protests are genuine.

Assuming our vendor has said yes, you now have a subject. Chances are, the minute you reach for your camera he will either freeze in a bolt-upright position or ask, "What do you want me to do?"

POSED CANDIDS

Take "posed candid" of the subject doing whatever he was doing when you first encountered him. This is a very interesting method and can lead to fine candid pictures that show the viewer you were obviously very close yet seemingly unnoticed. If you try this approach, be sure to stay around long enough to wait for the person you're shooting to lose interest in you and get on with whatever he was doing. Wait for him to lose his "I'm-having-my-picture-taken" stiffness, and try for the natural, relaxed shot.

CHOOSING LOCATIONS

On the other hand, you might want to pose the person. In this case, keep talking. Do your best to put him at ease and, as you talk, take a good look around. Is there a spot nearby with better light or a less distracting background? If so, don't hesitate to move to the better spot.

Once you have chosen a suitable location, read the light and adjust your equipment quickly. Don't fuss with lenses and filters or become preoccupied with the camera once the sub-

ject is posing, or he'll become bored with the whole idea very quickly. You, a total stranger, have asked for a few moments of someone else's time. Be ready to shoot, and work rapidly.

CHOOSING A POSE

The next problem is determining how to pose the person quickly, but in a pleasing manner. Professional models, as we have mentioned, know all about posing and can strike any number of beautiful stances in an instant. You may be lucky and find your subject is a real ham who loves to pose in interesting or funny ways. Chances are, however, he will need suggestions from you. First ask yourself whether you want a relaxed, natural-looking portrait or one showing a more formal, classic pose. Then show him the position to take by placing your body in a similar position.

POSING GROUPS

Suppose you are posing more than one person, perhaps a couple or a family. Groups inevitably line themselves up in a straight row and smile bravely. You must act quickly to arrange them in a more pleasing manner. Are they too far apart? Move them closer together. Try an off-center configuration for more interesting composition. Avoid posing two heads in the same horizontal plane, then compose the group in depth, with one subject slightly behind the other—making sure your lens and aperture will allow enough depth of field to ensure that everyone's in focus. Be on the lookout for a fresh, interesting attitude and avoid tired, "Here I am, take me," poses.

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BETTER PORTRAITS

Props and backgrounds have always been favorite devices for artists and photographers. Some environments or paraphernalia tell a great deal about the subject's personality; these elements can add visual interest as well. A woman's big floppy hat, an old man's fancy walking stick, or a little girl's favorite doll may help create a mood or define someone's character. In the case of our imaginary ice cream vendor, we already have one fine prop—his top hat. Another might be an ice cream cone, symbol of his trade.

In a similar fashion, an interesting background can help add richness, depth, visual excitement, and a wealth of information to a portrait. Arnold Newman, the New York portrait photographer, has developed an eloquent style of environmental portraiture. The subject is photographed in surroundings that tell the viewer something about his profession or interests. Whenever possible, design elements in the background are included in the overall composition.

YOUR PLACE OR MINE?

A final approach that should not go unmentioned here involves inviting a stranger to your studio to pose, either now or at some later time. So what if your studio is no more than a couple of lights and a plain background? I know a very successful and talented young photographer who finds her best portrait subjects on the bus, in restaurants or at parties. She simply walks over and introduces herself, explains her work, talks for a few moments and invites prospective subjects home for coffee or tea.

You can do the same. Talk to people. Take time to sit down and get acquainted. Remember that a good portrait session is an intimate collaboration between you and the person you're photographing. If you treat your subject as an abstraction, as an interesting collection of hair, clothing and wrinkles or as another client to be given the glamor treatment, your photographs will show little more than that. Stick to formula lighting and techniques, and you are sure to get formula pictures.

Instead, why not experiment? Try something different. Take a few risks. Try to make your next portrait really special. Open yourself up to your subject, and attempt to draw him out. Photograph each person's character and spirit, and show us not only how he looks, but how he *feels*. □

BLUEPRINT SERIES

How To Make Your Own Photographic Business Cards

BY KAREN DONELSON

PROJECT: To make your own photographic business cards.

PURPOSE: To produce a personalized card that also illustrates a facet of your work.

EQUIPMENT: 1. Sheet of white paper cut to 6¼ x 11 inches; 2. three sizes of transfer type (18-point, 24-point, and 36-point letters are suggested); 3. tracing paper and pencil; 4. a few favorite black-and-white shots, 2 x 2½ to 3½ x 5 inches or 2 x 10 inches in size, depending on card design used; 5. 3 x 12-inch sheet of glass; 6. camera with black-and-white film; 7. flash unit or a well-lighted area; 8. tripod or copy stand (optional); 9. darkroom set up for black-and-white film processing and printing; 10. Kodak Polycontrast Rapid RC paper, Type N.

PROCEDURE: Start by collecting some business cards. Study the placement of words, size of type, use of upper and lower case, lettering, and the use of a logo, if any. Decide for yourself which qualities are effective and eye-catching and which ones are not.

The business name or photographer's name is usually in the largest type, with the address a little smaller and other lettering in the same size as or smaller than the address. Sometimes the name is set off in a bold type, with address and additional words in a lighter typeface. If calligraphy is your thing and you're really good at it, go ahead and do your own lettering. But most people will need to use transfer type for the neatest, most professional-looking lettering. All kinds of type are available to suit any taste. Just be sure the type is clearly readable when later reduced to about ⅛-inch high or smaller.

Copy onto tracing paper each line of lettering as it will read on the finished business



1. Here are four examples of eye-catching business-card designs that can be produced using your favorite photos.

card. This will give you an idea of spacing between words and how long to expect each line of type to run. This is a particularly important step for any line that is to be centered on the card.

Miniaturizing your business card design will be necessary because you most likely will not want to work with a 1:1 scale model, preferring to spread your creative ideas out across a much larger, more easily handled size. Use the whitest paper available; inexpensive typing paper works well and can be cut to a 6¼ x 11-inch format, the approximate scaled-up dimensions of a business card.

Next consider what you want to put on the card. Choose a favorite photograph (or several) to be displayed on the card, then decide how large to make it. A tiny square or rectangular picture next to the name must be very simple and readily recognized, as must a photo that runs horizontally across the card to cover a third of the area. A vertical photograph can cover

as much as a third of the card and is large enough to show more detail, providing a fair reproduction for portrait photography, if that's the field you wish to advertise. But avoid anything too fussy or it will be overpowering.

Another way to incorporate your name and address with one of your favorite pictures is to superimpose them, bold and black, on an overexposed scenic or close-up shot, as is done with many personal checks these days. However, since you're working in black-and-white (full color being prohibitively expensive), choose the photo very carefully or your lettering will be partially obliterated by the background. Remember, the vital information on the business card is of equal importance to the photograph, so don't let it get lost.

After your letter type is chosen, determine how to arrange the words so that they enhance the overall look of the card. You will note in your collection of business cards, among many designs, that the

individual lines of type can be centered, lined up evenly on the left or right edge, or staggered like steps. Use your scaled-up format and traced lines of lettering together with your photographs (printed to size) to determine the best arrangement. Remember to allow ample space for thumbs! People tend to hold business cards by one of the bottom corners, so don't spread your name, address or phone number too far into those areas.

When your arrangement is set, you can then begin to produce the business cards.

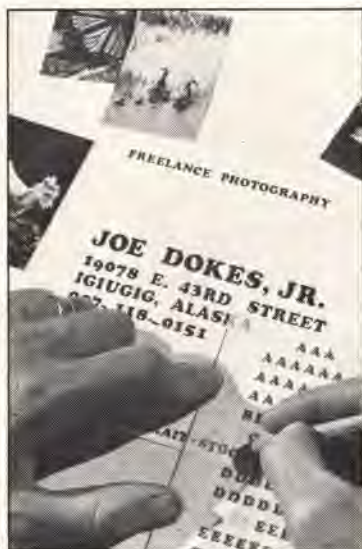
On the 6¼×11-inch-format sheet, gently rub the transfer type into place using a dull pencil. Use your traced lettering as a guide for spacing.

With the lettering rubbed or drawn onto the paper and accompanying photos ready, the next step is to photograph the model of your business card. Place it on a flat surface, put the sheet of clean glass over it, and slip one of your pictures into position. It is not necessary to glue down the picture since the glass will hold it in place, making it an easy task to change the photograph at any time. Set up camera and copy stand to photograph the scale model. Use flash or available light (if bright enough) to produce the whitest background possible (nothing looks more unprofessional than a gray business card when it's supposed to be white). Fill the frame with your scale model and shoot.

The rest of the procedure is the same as for ordinary black-and-white film developing and printing. Using any medium- or double-weight paper, you can make interesting and very personal business cards. If there is no preference, try Kodak Polycontrast Rapid RC paper, Type N. It has a very clean white, a fairly deep black for lettering, a smooth, nonreflective matte finish, and is of a medium weight, with the addition of being resin-coated for fast drying—an important consideration when making a few doz-



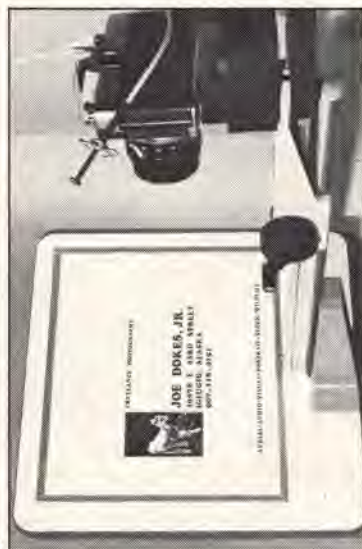
2. Transfer type comes in a variety of sizes and styles to suit any taste; it may be purchased at stationery, architect supply and some book stores.



4. On the scaled-up model, transfer type is pressed into place with a blunt pencil.



3. Traced lettering and photos are moved around on a 6¼×11-inch-format sheet to obtain the most aesthetic arrangement.



5. Camera-ready model is photographed, and cards are printed in the usual manner from the negative.

en prints at a time.

GENERAL DISCUSSION: Competition is keen these days, and a photographer, if he's aspiring to get anywhere, must always promote himself in a very positive manner using every means available. And that includes that all-important, 2×3½-inch giveaway called the business card.

Now, business it may be, but business it need not look.

Your creative talents are what you're selling, and *that's* what your card should impart.

It's no doubt cheaper to have a printer make up several hundred cards for you (if you need that many). But when someone spots that original photograph on the front and says, "Hey! Can I have one of those?" it's worth the trouble for the feeling of pride in your own work. □



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PHOTOGRAPHIC SILK-SCREENING

A MARRIAGE OF CAMERA AND PAINTBRUSH

BY ROBERT S. MARKS

If you want to make a nonsilver print of a photographic image on almost any surface or support from paper to glass, wood to plastic, or cloth to metal, there is only one process that does it all. If you want to create an image with transparent colored tones, semi-transparent shades of any single color, or in just two or three strong opaque colors, there is only one method to use. If you want the image you print to have the permanence of paint made with pigment, the durability of modern acrylics, or the gloss and brilliance of lacquer, there is but one process—silk-screen printing.

This process, which offers almost unlimited capabilities for reproducing photographic images, is used extensively in the commercial world; and in the fine arts, graphics are very often produced using the same basic process, which in that application is known as serigraphy. In either case, the process is both simple and practical. Its wide use in a myriad of product applications makes an almost limitless variety of materials and equipment readily available at moderate cost. Even the use of photographic originals to make silk-screen prints requires no special materials or techniques. Any photographer who can make a line positive (high-contrast print) can translate an original (either in black-and-white or color) into a silk-screen print that can be a literal reproduction or a highly stylized interpretation of the original image. And once the first print of an image is successfully made, it can be repeated to create an almost unlimited number of identical prints.

Basically the silk-screen technique has three steps. The first is to make one or more high-contrast (line-copy)

1. This image was originally a black-and-white photograph of a carved stone tablet on the side of a church. Four screens were used with the tone-line and tone-separation positives.

2. Tone-line positives and two screens were used to make this print.

3.-7. Five separate photographs of this Santa Fe drive train in Kingman, Arizona were taken on color transparency film. Posterizations and tone-line positives were printed with five screens on a black background. Matching was difficult and tedious; many months of evenings were spent on this series.





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PHOTOGRAPHIC SILK-SCREENING

positive images on litho film in the size you want the finished print to be. The second step is to make a stencil by contact-printing the positive onto a special stencil film and adhering this stencil to a piece of fine silk-screen material stretched over a frame. The final step is to force paint through the blocked-out silk screen onto your printing medium with a squeegee. Each tone or color in the silk-screen print is obtained by creating a separate high-contrast positive and then a stencil on silk derived from the original photographic image. Multiple tones or colors in a silk-screen print are made by successive printings with individual silk-screen stencils, which are made from separate line positives obtained through tone-separation, posterization, tone-line, and Mackie-line positives, etc. (These techniques are fully covered in Robert D. Routh's *Photographics*, from the Petersen How-To Photo-Graphic Library, as well as in other articles in *PhotoGraphic Magazine*, such as "Selective Posterization," by Jack Drafa, September, 1977 issue.) When building a color image from multiple silk-screen printings, 50 or 60 colors are possible with as few as five or six screens.

EQUIPMENT AND SUPPLIES

You will need these items to make silk-screen prints from photographic line positives:

1. A darkroom equipped with trays as large as the largest silk-screen print you intend to make, plus a yellow safe-light or bug light. An enlarger is not necessary; instead you may use a 1000-watt quartz lamp.

2. High-quality paper. I use Crown Zellerbach 80-pound cover stock, which is very smooth and very white. They have divisions in most major cit-

(Continued on page 69)

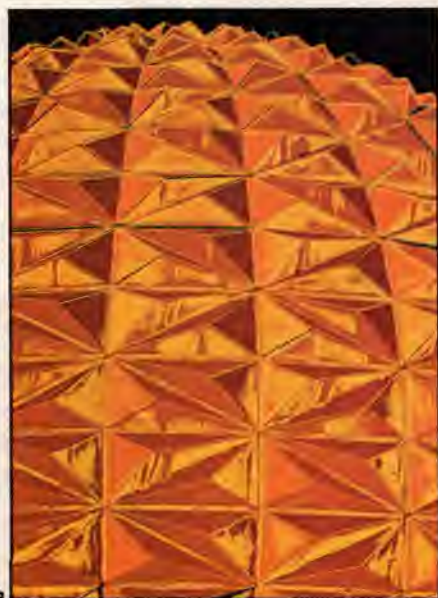
8. The same process used for print No. 2 was used to make this print. Remember, keep it simple—for some reason it works beautifully.

9. One tone separation and one tone-line positive were derived from a black-and-white photograph to make this print. Background is a texture-screen negative printed on black.

10. & 11. A 4x5 black-and-white negative of this schooner in Newport Harbor was my starting point for both of these prints. A tone-line positive and a hand-masked screen on a black background were used.

12. & 13. These two prints demonstrate how a change of color scheme with the same screens can change the emotional effect of the image.

14. Dandelion seeds were originally photographed on color negative film, from which a tone-line positive was made that provides the basic image. A piece of rice paper sprayed red and used as a negative is the background, printed on black.



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PHOTOGRAPHIC SILK-SCREENING

(Continued from page 65)

ies, or contact their headquarters at 1 Bush Street, San Francisco, California 94119.

3. Photographic line positive(s) the same size as your finished print will be, from which you will make silk-screen stencils.

4. A smooth, hard printing table or surface (Formica works well) plus a printing frame, vacuum easel, or heavy sheet of plate glass. For extensive printing a vacuum table is highly recommended.

5. Rolls of 2½-inch paper tape, double-sided Scotch tape and masking tape plus two soft scrub brushes.

6. T.S.P. cleaner and acetic acid to clean screen before use.

7. Plastic registration tabs.

From a silk-screen supply store or art supply store you will need to obtain the following:

8. Silk-screen photo stencil film and developer. Emulsion is coated onto Mylar; a 40-inch × 12-foot roll costs about \$24 and is enough for a year of printing.

9. Three or four silk-screen frames stretched with 12xx silk. Frames should be at least two inches larger all around than your largest image. (An 11×14-inch print requires a 13×16-inch frame, inside measurement.) You can buy the materials and build the screens yourself, order them custom-made, or buy ready-made screens, which is recommended for beginners to avoid registration problems.

10. Plastic silk-screen squeegee, medium-hard (rubber squeegees become dull very fast and need careful sharpening). Squeegee should be about two inches wider than your actual printed image. In addition, a small six- or eight-inch squeegee is good to have for test purposes.

11. Two heavy hinges or silk-screen frame hinges. Regular hinges have some play and can cause problems in registration. It may be necessary to slightly bend the pin to eliminate any movement.

12. Naz-Dar Watermask or one of the other brands of block-out.

13. Oil-base silk-screen paint. I use Naz-Dar 5000 series. Start out with pint sizes of the basic colors—red, green, blue, cyan (blue-green), yellow, raw umber, yellow ochre—and quart sizes of white and black. You will also



15



16



17

15. To position positive, lay it on the stencil film with positive's emulsion in contact with back of stencil film. Remember, the positive must read correctly with emulsion facing you. To make contact exposure, first cover positive and film with a clean piece of Mylar and then turn on vacuum table, or cover positive and film with clean plate glass and weight the edges to make good contact. (The line positive shown is one of several impressions used to make the print shown on this issue's cover.)

16. Pour developer onto emulsion side of film and develop 2½-3 minutes with constant agitation; this can be done in subdued room light. There will be very little change in film's appearance at this stage.

17. Wash film with a gentle spray of water at 100-108°F. Spray and drain until all of positive image area is completely clear. Any residue will plug screen openings. Let film sit in cold water four to five minutes to set gelatin.

need retarder thinner (one gallon), transparent base (one quart), and Naz-Dar No. 2555 screen wash (one gallon) for cleanup.

14. Enzyme-type photo silk-screen stencil cleaner. There are many brands on the market; use one made by the manufacturer of your photo silk-screen stencil material.

The major suppliers of silk-screen materials in this country are Naz-Dar Company, 1087 North Branch Street,

Chicago, Illinois 60622; and J. Ulano & Co., Inc., 610 Dean Street, Brooklyn, New York 11238. McGraw Colorgraph Company, 175 West Verdugo Avenue, Burbank, California 91502, makes excellent silk-screen stencil film and developer; J. Ulano & Co. also offers a good selection of films and makes stencil-film developer. Some art supply stores and silk-screen suppliers, such as Naz-Dar, have available silk-screen "starter" kits for about \$25; the kits lack photo stencil film, so it must be purchased separately. Also be sure the paint supplied with them is oil-base.

PREPARING THE SCREEN

When making photographic prints, you almost always work with negatives, but for silk-screening you must work with line positives that read correctly from the emulsion side—when you look at the emulsion side of the positive, the image appears the way you want it, not reversed. These positives must be line images, only black-and-white, with no midtones.

PHOTOGRAPHIC SILK-SCREENING

When you have your line positive, you then make a photo stencil of it using silk-screen stencil film. The easiest and least time-consuming way to do this is as follows:

Unroll the stencil film and, with scissors, cut a piece slightly larger than the line positive. Lay it emulsion-side down on a vacuum easel or work surface. Lay the line positive on top of the stencil film, emulsion-side down, so that the emulsion of the line positive is in contact with the back of the stencil film (see photo No. 15). The film has a very low level of sensitivity and can be handled under a yellow safelight.

Some means of good contact between the line positive and the stencil film must be achieved during exposure, as in normal contact printing. A printing frame or a heavily weighted sheet of plate glass on a flat surface will do, or you can cover the positive and stencil film with a piece of Mylar and place it on a vacuum table, as shown in photo No. 15. The light source must give a lot of ultraviolet radiation. You can use sunlight (not always practical), quartz lights, photofloods, or even fluorescent lights. Exposure varies with intensity and distance from the film; I use a 1000-watt quartz lamp four feet away for 10-15 minutes. The lighting for exposure must be even overall—the four-foot distance gives me good coverage of a 24×24-inch area—and the film surface must be kept cool with a small fan or the soft gelatin will melt. Several smaller images can be exposed at the same time in a 24×24-inch area.

After exposure, the stencil film is developed. If the film has been stored in a cool place, it can be developed in water; otherwise it can be developed in diluted hydrogen peroxide (20-volume diluted 1:6; this can be obtained at the silk-screen supplier, or use drugstore-bought solution, which is 10-volume and should be diluted 1:3) or in stencil-film developer, for two minutes. This developer can be used over and over but has a life of just 24 hours.

The film is then washed in a hot (100°-110° F.) spray. I use the kitchen sink, where the dishwashing spray hose works well. Areas of the film emulsion that received no exposure will wash off completely, leaving an image consisting of the exposed areas (see photo No. 17). When the unexposed areas are completely washed away and



you see no more emulsion running off, immerse the film in chilled water to set the gelatin. This will prevent any damage to the image.

The next step is to adhere the gelatin emulsion to the silk screen. First you must make sure the silk is very clean and grease-free. Washing with a solution of T.S.P. in water and a soft scrub brush and rinsing with a weak acetic-acid solution will do. Do not touch the silk with your hands after cleaning it—any oils on the screen will prevent the stencil film emulsion from

adhering.

Then, on a flat surface build a stack of newspapers slightly smaller than the inside dimensions of the silk-screen frame. Lay the stencil film, emulsion up, on the newspaper stack. Visually center the silk-screen frame over the film and gently lower the silk onto the emulsion, as shown in photo No. 19. Do this carefully; you get only one try. Then blot gently from the top with newsprint, just enough to soak up excess moisture and eliminate any air bubbles between the film and the silk.



26

18. Cleanliness is an absolute necessity throughout all steps. Before adhering stencil film to screen, give screen a gentle scrubbing with two brushes using T.S.P. cleaner, then rinse with a weak acetic acid solution. After cleaning, do not touch screen.

19. Remove film from cold water and set it on a pad of flat newspaper slightly smaller than the screen's inside dimensions. Position clean screen over film and carefully lower it onto film. You only get one try, so be careful! Gently blot excess moisture from inside of screen with newspaper. Very little pressure is needed. Inspect for air bubbles and blot gently until these are removed (blotting too hard will break fine lines). Set weights on screen edges so that good contact is maintained; leave in position 15 minutes.

20. Let screen air-dry; a gentle fan of cool air can also be used to speed drying. After film is completely dry, peel Mylar base off screen.

21. Use a flat-edged object such as a card to apply Watermask block-out around edges of image. Two or three coats may be needed. Let dry. (Block-out can also be used as a retouching medium.)

22. Using 2½-inch paper tape, make a leak-proof tray of the screen. Cut tape about four inches longer than edge of screen; slit tape two inches at ends to go around corners. Use Watermask again over tape.

23. If using silk-screen hinges, set screen frame solidly into hinges. If using regular hinges, screw hinges into work-surface edge and attach firmly to screen frame. Position sheet of paper under frame and tape to work surface.

Place a few weights (such as cans of paint) on the frame edges and leave to set for about ten minutes. Remove the weights and lift the screen off the paper. Set the screen aside to dry. A light flow of cool air can be used to speed drying. When the screen is completely dry, you can peel the Mylar backing off the gelatin emulsion (see photo No. 20).

It is now necessary to block out the screen from the edge of the gelatin to the inside of the frame edges, using two or three coats of Naz-Dar Water-

24. Pour paint onto screen above image area. Begin with a moderate amount, as more can be added as needed.

25. Grasp squeegee firmly, as shown. Set squeegee above paint onto screen, and with a firm, steady stroke pull squeegee and paint toward you. Do not stop! Pull past bottom of image to be sure all of image is covered. Squeegee should be held at an angle of no greater than 30 degrees or smearing may occur. Lift screen and prop up with commercial lifting device or a stick screwed into side of screen. Remove paper and hang to dry.

26. To aid in registration of different impressions, insert second screen in frame and make a "print" on a clean sheet of Mylar. Lift screen, peel Mylar back, and prop up Mylar with a block of wood to dry. Leave Mylar sheet attached to work surface.

27. Slide previously printed serigraph under printed Mylar and position it in registration.

28. Without moving paper, set registration tabs against edge of paper and tape it to the table, with two tabs on the sides and one on the bottom.

29. You can also make your own registration tabs by folding a piece of paper into a Z shape. Slide tabs under paper and tape them.

30. Remove Mylar print used for registration and set paper firmly against all three tabs. Lower screen; pour in paint and print. Remove screened print and hang to dry.

mask, as shown in photo No. 21. Then, with paper tape, mask the silk where it meets the wood frame, thus making a tray of the silk-screen frame, as shown in photo No. 22.

MAKING THE SILK-SCREEN PRINT

Hinge the silk-screen frame to a flat surface and position the paper on which the silk-screen print is to be made under the screen (see photo No. 23). Pour silk-screen paint into the frame at the top of the image, and pull the squeegee over the screen with even pressure, forcing the paint through the areas of the screen that



27



28



29



30

are not coated with the gelatin image (see photos No. 24 and 25). The right amount of pressure comes with experience. Then lift the screen, remove the paper, and hang it to dry. It is possible to repeat this over and over. I have made a 100-sheet edition with six screens in one day with no problem—that's 600 impressions! It goes fast when you get some experience under your belt.

If more than one screen is to be used, it is necessary to keep the images properly registered. I use a sim-

PHOTOGRAPHIC SILK-SCREENING

ple but very accurate method of registration. When the second screen is hinged to the printing surface, I tape a sheet of clear Mylar that is slightly larger than the screen onto the table under the screen, and then make a print of this screen on the Mylar (see photo No. 26). Then I clean the screen and wait until the printed Mylar is dry. Now I can slide one of the prints made from the first screen under the taped-down Mylar and position it properly, using the Mylar to show exactly where the second screen's image will appear (see photo No. 27). Registration stops are then butted to the edge of the properly positioned first-screen print and taped down, as shown in photo No. 28. Three are used—two on the side and one on the bottom; you can also use pieces of paper folded into a Z shape, as shown in photo No. 29. Now the paint can be repoured back into the screen and the second print run made, in perfect registration. This procedure is done with each screen/color needed. Remember that when applying many layers of paint, you can use transparent paint to create new colors.

A word of caution: Silk-screen inks and solvents must be used in a well-ventilated area. The fumes are toxic and can cause headaches, dizziness and serious respiratory problems.

After a printing run, the screen must be thoroughly cleaned to prevent paint from clogging the screen openings (see photo No. 33). Screens can be reused many times if you take care of them. Dried paint is almost impossible to remove. The stencil film is easily removable with an enzyme-type cleaner and elbow grease. The screen can then be reused.

When you plan to print an edition, start with ten percent more paper than needed. This is about average, figuring for goofs. The more color runs per edition, the more loss will occur.

You are now ready to sign and number your edition and head for the nearest gallery, no longer just a good photographer but also a great artist and serigrapher. I have been amazed by the way my images have been accepted in the art world since I've been printing them with the silk-screen technique. Last week I bought a French beret—next I'm considering cutting off an ear! □



ALL PHOTOS BY THE AUTHOR.



31. For hanging racks I built three simple frames from 1x2-inch wood and nailed clothespins to them at two-inch intervals. I hinged one end to the wall and put a pulley arrangement at the other. This way the racks can be swung out of the way when not in use.



32. Remove extra paint from inside of screen with a piece of cardboard. Place a small stack of newspaper under screen to keep printing surface clean. One piece of paper can be removed after each cleaning step.

33. To clean screen, first wipe up loose paint with paper towels, then clean screen thoroughly with a paint solvent or screen wash. To remove emulsion stencil material from screen, use an enzyme-type silk-screen cleaner. Dried paint in screen fabric will not allow you to use it again.

BIBLIOGRAPHY

- Caza, Michel. *Silk Screen*. Van Norstrand-Reinhold Co., Inc., 450 West 33rd Street, New York, New York 10001.
- Creative Darkroom Techniques*. Eastman Kodak Co., 343 State Street, Rochester, New York 14650. Catalog No. 1422211.
- Gardner, Andrew B. *The Artists' Silk Screen Manual*. Grosset & Dunlap, 51 Madison Avenue, New York, New York 10010.
- Hiett, Harry L. *57 How-To-Do-It Charts*. Signs of the Times Publishing Co., 407 Gilbert Avenue, Cincinnati, Ohio 45202.

Kosloff, Albert. *Photographic Screen Printing*. Signs of the Times Publishing Co.

Routh, Robert D. *Photographics*. Petersen Publishing Co., 8490 Sunset Boulevard, Los Angeles, California 90069.

Woodhead, H. C. *Creative Photographic Printing Methods*. Amphoto, American Photographic Book Publishing Co., Inc., Garden City, New York, 11530.

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David McEnery: A Sense of Humor

David McEnery is a quiet man with an unusually good sense of humor. As an internationally recognized press photographer of considerable achievement, McEnery possesses the ability to photograph people and situations in a manner universally regarded as funny. Sounds easy, but to anyone who has ever tried to create a humorous photograph the obstacles are obvious and formidable.



Whether McEnery "sets up" his photos or not is debatable as he invariably pleads the Fifth Amendment when asked this question. But that is really not important. What is remarkable from a photographer's standpoint is the clarity of McEnery's visual alphabet. He utilizes the most simple and direct symbols or juxtapositions to tell his joke or get across his meaning. Like any good newspaper photographer, McEnery has the ability to distill the elements in his scenes so that they instantly convey meaning.

McEnery's photographs are not unlike cartoons in the sense that they provide a brief respite from the imposed gloominess of everyday life. What better vehicle for images such as these than the morning newspaper—an organism almost entirely composed of bad news. McEnery, who hails from Great Britain, is a household item there because of the frequency with which his work appears on the pages of British dailies.

McEnery's photographic tools are the simplest. He uses Nikon cameras and most frequently 200, 135, 50 and 24mm lenses. His film is Kodak Tri-X developed in Kodak D-76, 1:1. McEnery's technique is also simplistic and relies heavily on the attitude that content is much more important than the style of the photograph.

David McEnery's work as a body helps us to value one basic and universal human gift—our ability to step back and laugh at ourselves. McEnery helps us to see ourselves as human, and for that we should be grateful. □





David McNery



David McNery





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THAT'S IMAGINATION. THAT'S PLYMOUTH.

understanding the gray card

how to be nearly perfect for \$1.95

by mike stensvold

It's simply a piece of cardboard—and it's cheap (a pack of four costs \$1.95 at your local camera shop), yet it's one of the most useful—and least understood—devices a photographer can buy. It's the Kodak Neutral Test Card, and here's what it can do for you: It can help you and your light meter produce perfect exposures on your film, color or black-and-white, almost every time; and it can help you (or your color lab) make close-to-perfect color prints from your color negatives. But you have to know how to use it.

WHAT IS THE TEST CARD?

The Kodak Neutral Test Card is an 8×10-inch piece of cardboard that is gray on one side and white on the other. The gray side of the card is often referred to as an "18-percent gray." This is incorrect. The gray side of the test card is entirely gray; it is 100-percent gray. Actually, the gray side of the test card is an 18-percent-reflectance gray. It reflects 18 percent of the light that strikes it. This 18-percent-reflectance gray is a medium gray tone, just about midway between white and black. It is also the tone for which light meters are programmed. The gray side of the test card is used more often than the white side, so the test card is often called a *gray card*.

The white side of the gray card reflects 90 percent of the light that strikes it, and its use will be covered before the end of this article.

LIGHT METERS

Before telling you just how to make best use of the gray card, I'd like to review the subject of light meters, because understanding how they operate is necessary if you are to make the most of your gray card. We'll start with the handheld reflected-light meter, then cover the handheld incident-light meter



1. At four for \$1.95, Kodak's Neutral Test Cards are a real bargain. Each card has a gray side that reflects 18 percent of the light that strikes it, and a white side that reflects 90 percent of the light. Although designed primarily for color photography, the cards are also valuable in black-and-white work.

and the in-camera meter.

Light meters, as you might or might not know, do not tell you the proper exposure for a given scene. Light meters tell you how much light is striking them. This information, along with the speed of the film you are using, can be fed into the calculator dial on the meter to obtain a series of suggested shutter speed and lens aperture combinations. But these don't necessarily indicate the proper exposure for the scene, either.

Should you be a bit confused at this point, consider this: The light meter is a device, not a thinking being. It does not know what you are pointing it at; all it knows is how much light is striking it. If you take the meter outside and point it at a white building, a lot of light will strike it, and it will tell you that a lot of light is striking it. If you point it at a black horse, very little light will strike it, and it will tell you that very little light is striking it.

OK, if you point the meter at the white building, it tells you that a lot of light is striking it, and the exposure

calculator on the meter will tell you that you should give the film a certain exposure, say 1/125 at f/22. If you point the meter at the black horse, it will tell you that very little light is striking it, and the exposure calculator on the meter will tell you that you should give the film a lot more exposure, say 1/125 at f/2.8.

Now, here's a question: What is the correct exposure if your scene consists of the black horse standing in front of the white building? 1/125 at f/22? 1/125 at f/2.8? Something in between? The same amount of light is striking both subjects, yet the meter has given us two different exposures.

In this case, the correct exposure is probably midway between the two readings—1/125 at f/8—and assuming that the white building and the black horse each occupy half of the image frame, the meter would even tell us that. But if the horse occupied only a small portion of the scene, the correct exposure would not change, but the meter would tell us to expose for 1/25 at f/22, because it will be struck by a large amount of light from the building, which occupies most of the scene.

Now consider this: The white building reflects about 64 times as much light as the black horse. But the meter told us to expose the building only 1/64 as much as the horse (six f-stops less). If we took a picture of the white building at 1/125 and f/22 on one frame of film and then took a picture of the black horse, which reflects 1/64 as much light, at 1/125 at f/2.8 (64 times the exposure), both the white building and the black horse would appear as the same tone on the film—both would have produced the same exposure on the film, and so both would appear as a medium gray tone. But that's not

gray card

what we want! We want a white building and a black horse.

Which brings us back to the point that the light meter can't think; it can only tell us how much light is striking it. The meter's exposure calculator dial can't think either, but it was programmed by someone who can, and it is used by you, the photographer, who also can think.

I said that the light meter's exposure dial was programmed by someone. When you set the film's speed and the light meter's reading on the calculator dial, it tells you what shutter speed/f-stop combinations you can use. Upon what are these combinations based? They are based on 18-percent-reflectance gray. Remember in our example how the exposure recommendation for the white building was for 1/64 the amount of exposure recommended for the 1/64-as-bright black horse, so that both would reproduce as medium gray tones on our film if exposed accordingly? *The reflected-light meter is programmed to give an exposure recommendation that will reproduce whatever you take the light reading from as a medium gray tone—the same tone as the gray card.* Why is it programmed that way? Because "average" scenes supposedly contain light and dark areas that average out to medium gray. But many scenes contain mostly light or dark objects, and with these scenes the exposure recommended by the light meter will reproduce these objects incorrectly.

Now can you see where the gray card can come in handy? Since the meter's exposure recommendation will reproduce whatever you point it at as medium gray, if you point it at the gray card, the resulting exposure recommendation will reproduce the medium gray tone of the card as medium gray. Objects in the scene that are darker than the gray card will send less light to the film, resulting in thin areas on the negative, and so they will reproduce dark, just as they should. Objects in the scene that are lighter than the gray card will send more light to the film, resulting in dense areas on the negative, and so they will reproduce light, just as they should. If you take your meter reading from the gray card, for which the meter's exposure calculator is programmed, all tones in the scene will reproduce properly in your print.

Incident-light meters read the light



ALL PHOTOS BY BILL HURTER.



2. If you take a reading with an incident-light meter (which measures the amount of light falling—incident—upon the scene), medium-toned subjects in the scene will be reproduced as medium-toned subjects, light subjects will be reproduced as light, and dark subjects will be reproduced as dark in the resulting photograph.

3. If you take a reading with a reflected-light meter, such as those built into cameras, the resulting exposure will reproduce the subjects in the scene properly only if they average out to a medium tone. If the scene is predominantly light or dark, the reflected-light meter's reading will result in under- or overexposure (see text and illustration No. 5).



4. If you take a reflected-light reading from the gray side of a Kodak Neutral Test Card using either a handheld reflected-light meter or a built-in camera meter, the result is the equivalent of an incident-light reading and will result in proper exposure under most circumstances.

the illumination falling upon the scene; therefore the other tones in the scene will also reproduce properly if the incident meter's exposure recommendation is followed.

Built-in camera meters are reflected-light meters that are connected to the camera's exposure control system (shutter speed and aperture). They have no exposure calculator dials; instead, the shutter speed and/or lens



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gray card

aperture is adjusted until an indicator needle centers. But since they are reflected-light meters, these meters are also programmed to reproduce whatever they take a reading from as a medium gray tone; therefore, taking the meter reading from a gray card lit by the same light source as the scene to be photographed will result in proper reproduction of all objects in the scene.

THE WHITE SIDE OF THE GRAY CARD

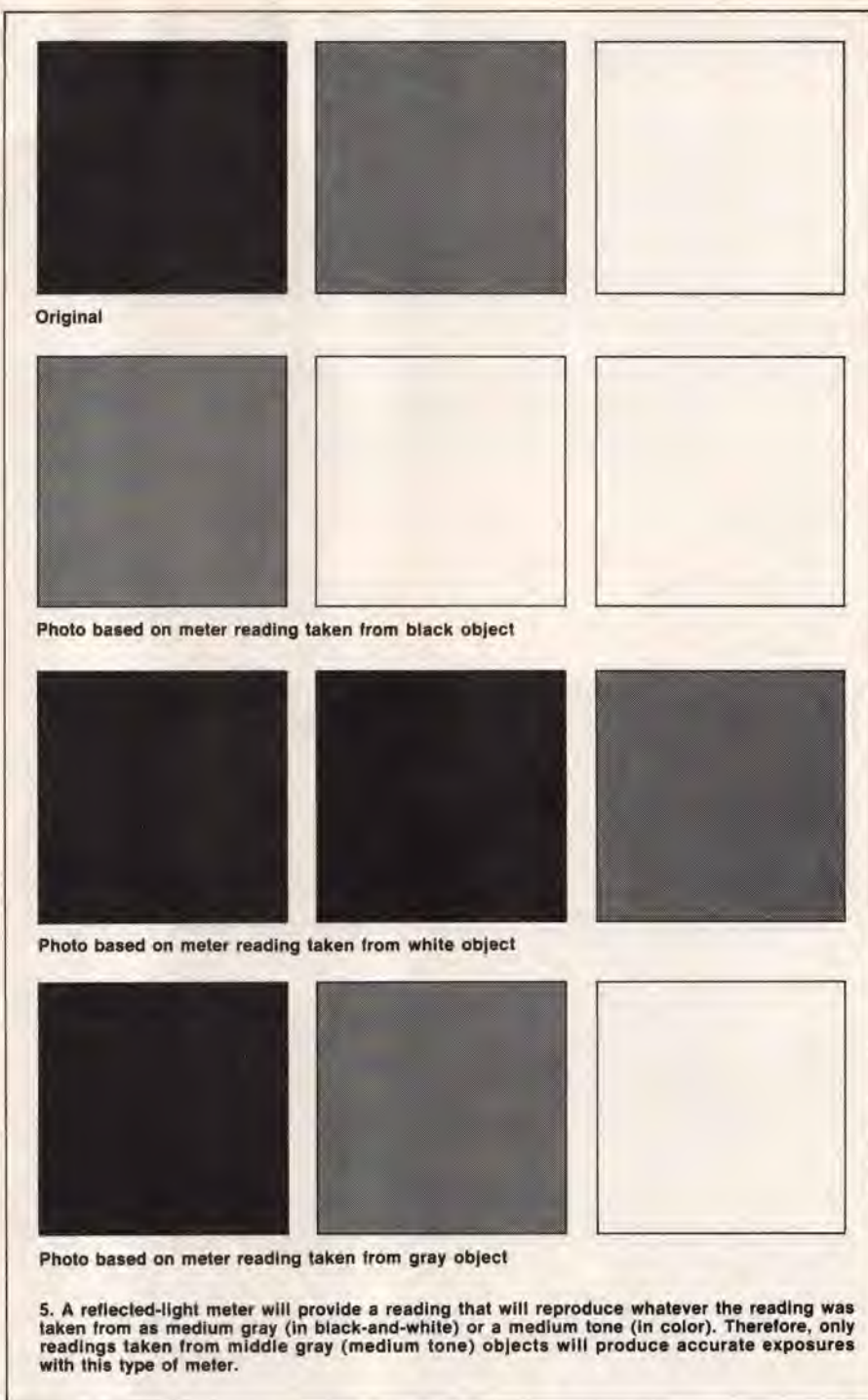
Sometimes the light illuminating the scene you wish to photograph is so dim that you can't take a meter reading from the gray card; the meter registers nothing when pointed at the gray card. If this happens, simply turn the card over and take a reading from the white side, which reflects five times as much light as the gray side. Of course, you are now taking your reading from an object that is not medium gray. To compensate, you can either divide the film's speed by five and program that into the meter's exposure calculator (or the camera's ASA index, if you're using a built-in camera meter) or leave the film's actual speed set on the dial, and open the lens $2\frac{1}{3}$ f-stops from the exposure recommended by the meter.

WHAT IF YOU DON'T WANT MEDIUM GRAY?

Sometimes, for various reasons, you might not want a medium gray tone in a scene to reproduce as medium gray. You might want it to reproduce lighter or darker. Various zone systems have been developed to allow you to do this. Without getting into zone systems too deeply (there have been books written explaining the books written to explain the zone systems), I'll just say that the 18-percent-reflectance gray tone of the gray card is Zone V—right in the middle—of the best-known, Ansel Adams Zone System. Average Caucasian skin is one step lighter—Zone VI. If you for some reason want to make a fair-skinned subject even more fair-skinned (Zone VII), just take the reading from the gray card and then open up one f-stop from the recommended exposure. This will make everything in the scene, including the subject's skin, one step lighter. (The gray card would then reproduce as Zone VI.)

A NOTE

Naturally, you would remove the gray card from the scene after taking the meter reading from it, before making your exposure, so that the gray



card will not appear in the photograph. But there is an exception even to this obviously common-sense rule, and that's color photography.

THE GRAY CARD AND COLOR

If you want to simplify your (or your lab's) color printing, include the gray card in the scene where it can be cropped out during printing, or shoot an extra frame of the scene including the gray card. There are two reasons for doing this: First, the fellow who makes prints at your color lab doesn't know the exact color of the objects you photographed, but he does know exactly what the gray card should look like. Even you might not remember ex-

actly what shade of blonde that lovely model's hair was, but you do know what your gray card looks like. Theory has it that if you make a print in which the gray card is the proper shade of gray, the print exposure and all the colors in the scene will be proper, too. Of course, dyes used in color materials are not perfect, but if you make a print in which the gray card is truly neutral gray, the colors in the scene will be about as close to correct as you can get them.

The second reason for including a gray card in your color scene is that all the calculators used to determine the proper filter pack and exposure for

When you shoot a great picture, you deserve a great print.

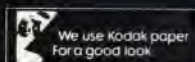
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gray card

KODAK NEUTRAL TEST CARD

White Side...90% Reflectance Gray Side...18% Reflectance

The KODAK Neutral Test Card is designed to provide a reference area of known reflectance for making exposure meter readings in scenes or for inclusion in pictures as an aid in controlling their reproduction. It is especially useful where precision is required, as in color photography. Manufacture of the Test Card is controlled within close limits to produce neutral surfaces of standardized reflectance values. To prevent specular or mirrorlike reflections, both sides have a matte finish.

USE WITH AN EXPOSURE METER IN ARTIFICIAL LIGHT

Basically, meter readings of the Test Card are measurements of incident illumination. They provide a reliable method of exposure determination, and are also useful in adjusting the lighting ratio, checking lighting distribution, and controlling background rendering.

Exposure Determination

The following technique of making meter readings is especially valuable with reversal films, which have more limited exposure latitude than negative films.

Hold the card straight up and down, close to and in front of the subject, and facing halfway between the camera and the main light. Make the light reading of the card with the meter not more than 6 inches away. Do not allow your shadow or that of the meter itself to affect the reading.

If made on the gray side of the Test Card, the meter reading will, on the average, be the same as a reflected-light reading of an average indoor scene, taken from the camera position. Thus it can be used to compute exposure by operating the meter calculator in the normal manner for reflected light.

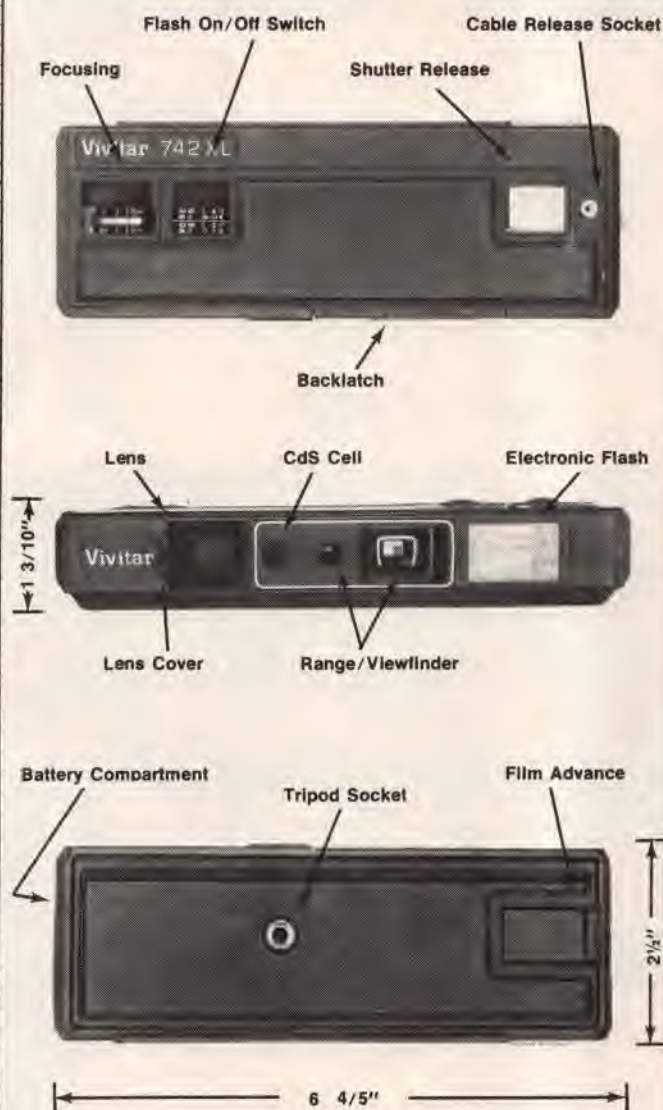
6. While simply taking a reading from the gray card will provide accurate exposure information for most practical purposes, the instructions that accompany the Neutral Test Cards provide additional information on how to use them for optimum results.

color prints—your simple subtractive calculator and the lab's complicated machine—are, like the reflected-light meter, programmed for medium gray. If your scene contains a mixture of colors that averages out to this neutral gray, the calculator/machine will produce a good print. If one color predominates in the scene, the calculator will try to correct it and provide filter information that will produce a print in which the color mixture averages out to neutral. If you had included a gray card in the negative or shot an extra negative of the scene including a gray card, the calculator/machine could give you a filter pack that will reproduce the neutral gray as the programmed neutral gray, thereby reproducing all the colors in the scene as close to their real hues as possible.

Whether you are using the gray card to determine exposure or to help in color printing, it must be in the same light as the scene photographed. If you put the gray card in the shadow of a tree, and your subjects are in bright sunlight, you are going to have problems. If your scene is illuminated by clear daylight, and you put the gray card right next to a bright red barn ... you guessed it. The light falling on the gray card must be the same as the light illuminating the scene you are photographing. □

SPEC SHEET

VIVITAR 742 XL POCKET CAMERA



TYPE: 110 cartridge-loading

LENS: 24mm f/1.9-16

SIZE: 6.8" long x 1.3" high x 2.5" deep
(173mm x 33.4mm x 62.4mm)

WEIGHT: 9.5 oz. (272g) without batteries

BASIC PACKAGE: Camera, wriststrap, jewelry-type storage case and instructions

PRICE: \$189.95

DISTRIBUTOR: Vivitar Corporation, 623 Stewart Street, Santa Monica, California 90404

FEATURES

Viewfinder: Optical with bright-frame and parallax correction marks. Includes green LED battery check (top left), red LED low-light warning (top center), and green LED flash ready light (top right).

Lens Construction: All-glass, five elements in four groups with built-in UV haze filter and slide-type protective cover.

Focusing: Coincident rangefinder coupled to continuous slide control on top of camera. Range is two feet to infinity.

Close-Up Capability: None

Shutter: Two-blade Seiko, electronically programmed with speeds from 1/800 to five seconds.

Shutter Lock: Lens cover doubles as shutter lock and must click into place when sliding open or closed to be operative.

Exposure Meter: CdS-programmed EE operates on two AA-sized alkaline batteries.

Exposure Programming: In bright-light conditions, the camera operates at a top speed of 1/800 at f/16. As light falls off, the CdS cell simultaneously controls both aperture and shutter speed until 1/30 at f/1.9 is reached. Below that exposure level (EV 7), the unit operates at f/1.9 as shutter speed decreases until it reaches its slowest speed of five seconds. EV range with ASA 100 film is 0-15.

Flash Synchronization: Turn on built-in electronic flash unit, wait for green viewfinder LED to glow.

Battery: Two 1.5-volt alkaline batteries (size AA) in external compartment (Mallory MN-1500, Eveready E91 or equivalent).

Battery Check: Green LED in viewfinder glows when shutter release is depressed halfway if batteries are serviceable.

Film Advance: Two-stroke, thumb-activated sliding type with automatic return and built-in double-exposure prevention.

Self-Timer: None

Cable-Release Socket: Located to the right of shutter release.

Tripod Socket: Located on the camera bottom near center.

Accessories: None

COMMENTS

The built-in flash concept so popular with pocket camera users is even more attractive when offered by the manufacturer of reliable flash units, Vivitar Corporation. The convenience of built-in flash is ready at the flick of a switch. The flash distance is controlled by the focusing mechanism to adjust for properly exposed photos with films of different ASA ratings. With ASA 100 films, set the focus mechanism and shoot subjects between .6 and 5.5 meters (2-18 feet); and with ASA 400 film, set mechanism and shoot between 1.5 and 11 meters (5-37 feet).

The focus-and-shoot ability of the Vivitar 742 XL is backed by the experience of this firm in creating more sophisticated products and is evidenced on this simpler camera by their care to include cable release and tripod sockets and the use of quality materials such as an all-glass lens. It's a generally accepted fact that it is impossible to get anything out of a product that wasn't put in (GIGO theory) and that concept is increasingly important as the format size shrinks if quality results are to be obtained with the product.

The Vivitar 742 XL delivers fine-quality results with the utmost ease and convenience of the photographer in mind while doing so. The exposure system, built-in flash unit and the information offered in the viewfinder take away the effort and leave behind the fun and pleasure of photographing the events and people around you.

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PRODUCT PROOF SHEET

(Continued from page 30)



NEW MOTORIZED INSTANT FILM BACK FROM KODAK

Eastman Kodak Company is introducing its new motorized instant film back, which adapts Graflok-back-equipped 4x5 cameras and other photographic recording equipment to use Kodak instant print film PR10. There are many uses for this innovation, including medical, law enforcement, special-event photography, and other photographic activities where rapid access and consistency are important. The textured Satinluxe-finish image develops in minutes outside of the film back without peeling or timing. The print film produces ten full-color 2 5/8 x 3 9/16-inch pictures. The instant film back has a list price of \$100, and an optional A/C power supply lists for \$50. For more information contact Eastman Kodak Company, 343 State Street, Rochester, New York 14650.



FULL-SIZE PROJECTION SCREEN THAT'S EASY TO CARRY

Port-A-Screen is a projection screen that folds to only 3x10x10 inches. The telescopic aluminum tubing has spoke locks and is designed to be strong, durable and lightweight (3-4 pounds), making it useful for business presentations as well as private, home use. Port-A-Screen can stand on the floor or table; its height can be adjusted; it can be tilted; and by removing the tripod feet, it can be hung on the wall. The "Full Response" polyester screen is washable, and is available in three screen sizes. The 40x40-inch screen has a suggested list price of \$49; the 50x50-inch lists for \$69; and the 60x60-inch lists for \$89. For more information contact Simon & Associates, 1019 Trillium Lane, Mill Valley, California 94941.



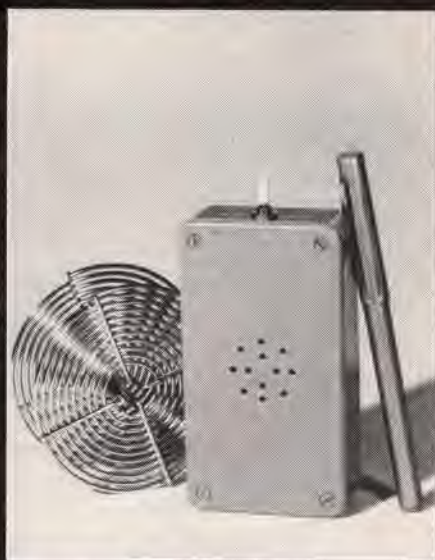
QUICK-DRAW BINOCULAR

Bushnell Optical Company is introducing a new eight-power compact vacation binocular. The Kwik-Draw® case allows access to the binocular without interference from camera straps or other outdoor gear. One pull on the case tab and the binocular can be removed instantly. The Sportview® vacation binocular features Insta-Focus® and is lightweight and compact. The suggested list price for the Sportview® vacation binocular (model #13-8360) with case is \$48. For more information write Bushnell Optical Company, Division of Bausch & Lomb, Department PR182, 2828 East Foothill Boulevard, Pasadena, California 91107.



NEW BORDERLESS EASEL

The new Saunders/Omega Standard Borderless Easel, built on the same principles as the professional Saunders/Omega borderless easels, has a moderate suggested retail price of \$17.95. This new model has two fixed-angled sides and a sliding retaining bar, fully adjustable for any paper size from 4x5 inches to 11x14 inches. To provide optimum paper flatness and firm seating on the enlarger baseboard, the stretcher-leveled steel base has five large nonskid rubber pads. Other features include focal-yellow baked-enamel finish that provides a contrasty image for accurate focusing; a movable retaining bar of anodized aluminum to hold paper securely; and two knurled knobs with brass threads to maintain precise paper adjustment. For more information contact Omega Division, Berkey Marketing Companies, P.O. Box 1102, Woodside, New York 11377.



HAVE YOU HEARD THIS ONE?

The Time-Minder TM3060 is being introduced by Harper-Stanley Company. This audible timer relieves the darkroom worker from having to watch the clock during the agitation cycle of film development. A shirt-pocket-size timer, this unit produces a five-second tone every 30 or 60 seconds, depending on the photographer's needs. Completely self-contained and powered by a nine-volt radio battery, the unit is housed in a high-impact plastic case and has a suggested retail price of \$32.95. For more information contact Harper-Stanley Company, 305 University Tower Building, Little Rock, Arkansas 72204.



A BETTER WAY TO REMEMBER

Better-Way Products is introducing a new photographer's log called Photo-Data. Measuring 4x8 1/4 inches, Photo-Data fits into a pocket or gadget bag. There are no staples that can snag clothing or scratch equipment. With a self-explanatory format and elimination of redundant information, the log is designed to save space and increase efficiency. Each page is removable for storage with negatives or prints. Photo-Data has a suggested list price of \$1.95 plus \$.75 for postage. For more information contact Better-Way Products, 21330 Center Ridge Road, Rocky River, Ohio 44116.

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OTHER VOICES

(Continued from page 27)

MOUTHING SUBSTITUTES

In response to the inquiry of Mr. Doug Gorrell of Kansas City, Missouri in the September, 1978 issue regarding his search for a mouth-operated cable release, I am pleased to report that one exists. It was made by Leica (the accessory virtuoso of all time) and listed in their 1961 catalog (No. 36, page B19, Item No. 14,084). In



the event that Mr. Gorrell is unable to locate one of these probably rare items, I have invented a method of converting an ordinary cable release into a mouth-operated one, using only an ordinary Kodak plastic film canister!

Simply slit the canister straight down the sides into four equal quarters. Cut off two of the opposing quarters, leaving two opposing "tongues." Then make a small hole near the end of one tongue and insert the cable release so that the "plunger" lies within the two tongues. Then put the bottom end of the canister in your mouth and bite down. You will be amazed at the simplicity and efficiency of this device!

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LAUDS FOR YOB

Thank you for your August, 1978 issue. Special thanks to Parry C. Yob for his article, "Publish Your Own Work." This card is my own first effort in publishing, achieved through the information contained in the article and the service provided by a local printer.

As a neophyte photographer, I find your magazine invaluable for practical clues and innovative ideas pertaining to photography. With each issue the medium becomes less mysterious and more exciting. My next goal is to be selected for "Gallery '79," so you will hear from me again.

J. Quigley

Hartford, Connecticut

This month's "Blueprint" may also be of interest to you.—Ed.

Photographic's SPEC SHEET

LENS: Soligor 35-140mm Zoom & Macro



ANGLE OF VIEW: 63° to 17°
NUMBER OF ELEMENTS: 13 elements in 11 groups
ACCESSORY SIZE: 72mm
APERTURE RANGE: f/22 to f/3.5
FOCUSING RANGE: Normal mode, 5 feet (1.5m) to infinity; macro mode, 8.8 in. (22cm) to infinity
CLOSE FOCUS MAGNIFICATION: 1:3 to 1:10
DEPTH-OF-FIELD SCALE: No
INFRARED FOCUSING MARK: Yes
LENS COATING: Multicoated
WEIGHT: 28 oz. (800g)
FINISH: Black
LENGTH FROM FRONT TO FLANGE, AT INFINITY: 4.9 in. (123mm)
MAXIMUM BARREL DIAMETER: 3 in. (74mm)
CLICK STOPS: Full-stop detents
ROTATION DIRECTION FROM INFINITY TO CLOSE-UP, IN USE: Clockwise
BUILT-IN LENS HOOD: No
SPECIAL FEATURES: "One-touch" wide-angle zoom/macro control.
MOUNTS AVAILABLE: Canon FD, Konica EE, Minolta MD, Nikon AI, Olympus OM, Pentax K, Pentax/Universal and Yashica Contax (availability to be announced).
PRICE: \$589 with front and rear lens caps.

LENS: Soligor Compact "G" 70-150mm Zoom



ANGLE OF VIEW: 34° to 16°
NUMBER OF ELEMENTS: 12 elements in 9 groups
ACCESSORY SIZE: 55mm
APERTURE RANGE: f/22 to f/3.5
FOCUSING RANGE: 6 feet (1.8m) to infinity
CLOSE FOCUS MAGNIFICATION: 1.5:3
DEPTH-OF-FIELD SCALE: No
INFRARED FOCUSING MARK: Yes
LENS COATING: Multicoated
WEIGHT: 15.7 oz. (450g)
FINISH: Black
LENGTH FROM FRONT TO FLANGE, AT INFINITY: 5.5 in. (136mm)
MAXIMUM BARREL DIAMETER: 2.48 in. (62mm)
CLICK STOPS: Full-stop detents
ROTATION DIRECTION FROM INFINITY TO CLOSE-UP, IN USE: Clockwise
BUILT-IN LENS HOOD: Yes
SPECIAL FEATURES: None
MOUNTS AVAILABLE: Canon FD, Konica EE, Minolta MD, Nikon AI, Olympus OM, Pentax K, Pentax/Universal and Yashica Contax (availability to be announced).
PRICE: \$279 with front and rear lens caps.

LENS: Soligor 75-205mm Zoom & Macro



ANGLE OF VIEW: 30° to 12°
NUMBER OF ELEMENTS: 13 elements in 9 groups
ACCESSORY SIZE: 62mm
APERTURE RANGE: f/22 to f/3.5
FOCUSING RANGE: Normal mode, 6.5 feet (2m) to infinity; macro mode, 5.5 in. (136mm) to infinity
CLOSE FOCUS MAGNIFICATION: 1:2.6
DEPTH-OF-FIELD SCALE: No
INFRARED FOCUSING MARK: Yes
LENS COATING: Multicoated
WEIGHT: 32.5 oz. (930g)
FINISH: Black
LENGTH FROM FRONT TO FLANGE, AT INFINITY: 7.2 in. (180mm)
MAXIMUM BARREL DIAMETER: 2.76 in. (69mm)
CLICK STOPS: Half-stop detents
ROTATION DIRECTION FROM INFINITY TO CLOSE-UP, IN USE: Clockwise
BUILT-IN LENS HOOD: Yes
SPECIAL FEATURES: Close-focusing at all zoom positions.
MOUNTS AVAILABLE: Canon FD, Konica EE, Minolta MD, Nikon AI, Olympus OM, Pentax K, Pentax/Universal and Yashica Contax (availability to be announced).
PRICE: \$396 with front and rear lens caps.

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CONTEST NEWS

(Continued from page 8)

The Benefactors of Concord is sponsoring the second annual "Pictures" national photography competition and exhibition. Black-and-white and color photographs of any size or subject matter may be submitted, as well as works using nonsilver processes (slides will not be accepted). Closing date for entries is March 1, 1979. For further information and a list of guidelines write Bob Lindenmann, "Pictures" Coordinator, P.O. Box 245, Concord, California 94522.

* * *

The National Bowling Council announces its fourth annual **Bowling Photo Contest**. Pictures must "reflect the excitement, vitality, skill, or recreational benefits of the sport of bowling." The contest is open to press photographers and free-lance photographers; all entries must be submitted with proof of publication. Closing date is April 1, 1979. For contest details write the National Bowling Council, Department P-1, Suite 611, 1666 K Street, NW, Washington, D. C. 20006.

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□ M. Richard Kirstel, who was interviewed in last month's column, believes that it is the essence of totalitarianism to base one's definitions on one's value judgement—to define a photograph that one likes as art, a definition after a value judgement rather than the other way around. More valid clues can be looked for, Kirstel believes, clues similar to those of the poet who uses structure, rhythm and form to convey his images and to lift the reader to a different level of consciousness.

"I think that the serious artist/photographer uses certain forms, devices, understandings, visual definitions to alert the viewer to a more prolonged contact, a more focused energy in his perception," states Kirstel. "I do not mean by this the vocabulary symbols themselves, but rather the understanding of tones—particularly the relationships of tones to each other—to give a deeper meaning to the visuals carrying these tones. It all starts with that sense of credibility that comes with looking at something—this is what photography is all about.

"If it's true that the camera and the eye work alike, as we have been told, then the structure of the imagery derived from both would be similar. The camera, as an extension and tool of the eye, would yield a structure that is analogous to the structure of the eye, which, in basic physiology, has three parts: the *fovea*, which renders that incredibly detailed exactitude; the *macula*, which renders detail but more grossly, without the same degree of sharpness and detail as the fovea; and the *periphery*, which establishes the visual field to which you are relating the sense of space and time. Thus, in the structure of a photograph the primary event, that event that arrested the photographer and was his primary concern, is analogous to the fovea. Analogous to the macula of the eye would be the incidental information of the photograph, the sense of context, the variety of information that supplies the basic tapestry out of which comes the notion of importance conveyed by the primary event. Finally, the total structure of the image—size, scale, framing, that sense of depth that is read or inferred from the photograph, the time sense, the angle of view—would be analogous to the periphery of the eye. I think this analogy supplies a syntax of understanding, something that yields certain awarenesses that may seem obvious but until phrased seem to escape many students. For example, in printmaking you put the most demanding tones where the

camera ON CAMPUS

ROBERT ROUTH

THE STRUCTURE OF FINE-ART PHOTOGRAPHY

most important visuals—those that first captured your interest—are. The more serious you are, the more thought you put into crafting your final statement."

Kirstel further comments that even though a photographer may wish to take a picture that is hewn as close to his original observation as possible, nevertheless the image is in his personal reality because it is a linguistic shaping of the original, implacable, existential actuality; and its use of the symbols creates a new re-



This photograph by M. Richard Kirstel is an example of his interpretive, rather than representational, style; for an elaboration of his philosophy see text.

ality in itself. He states, "You see only what and how you can think, and the language with which you think directs, informs and shapes what you see. Learning the subtleties of the language of photography will develop an awareness of the structure of the image, permitting us to think with finer and finer definitions in real imagistic terms." Kirstel contrasts this with the practice of playing with symbols. When it is done on a very sophisticated level, he calls it the "Minor White syndrome," and while respecting his former teacher, Kirstel points out that you have to know the accompanying mystical language. "I don't believe that is teaching photography. Sometimes a telephone pole is just a telephone pole, not a phallic symbol." He goes on to describe this *ex post facto* attribution as an avoidance of visual thought, as more often a falling in love with a projected verbalization of one's own

imagination.

In stressing the importance of structure and the awareness that concept dictates percept, Kirstel believes that the understanding of the lens image has influenced the direction of art since the Renaissance. He compares its influence in the social evolution of humanity to the bow and arrow in our commitment to tools as evolutionary extensions. He states, "When we (Western civilization) refer to perspective, we are referring to the optical perspective of the lens image. The enhancement of vision by the lens image has become so permeated through our consciousness that it's not only part of our thought processes, but it also represents an important milestone that was crossed in the process of human social evolution. Moreover, with the social development that we have concentrated on, photography became as much a natural development of the evolution of humanity as writing.

"I think that if we recognize there is a valid syntactic structure to relate to, we can understand the forms of what we are doing with enough clarity so that visual thoughts can be left to be visual thoughts. In our understanding of lens enhancement we can become more and more aware of how the photographer related the primary event to the incidental information, how he did this in *visual* terms, so that we can say, 'I never thought of thinking about this in this way.' Not merely an 'I like it' response, but with an understanding of what the photographer intended."

Kirstel compares Henri Cartier-Bresson to W. Eugene Smith—the former very visual, very reactive, attuned to "the decisive moment," as opposed to Smith with his deeper time sense, his extended exploration of an idea, his sense not of "this is what it looked like" but rather "this is how I feel about it." Cartier-Bresson might be compared to a travel writer with a marvelous turn of phrase, Smith to a poet showing us insights of the human condition that we could not see ourselves. "Although I regard Cartier-Bresson as one of the greatest photographers of the 20th century, with his admirable vision and observations, I would not call him an artist. No matter how fine that is, it's not the same thing as when an artist tries to project an understanding of the ensemble of his own deepest emotions with the observations he makes of the visual world, projecting this as a matrix of distortion to the viewer to give him a personal way of seeing that he could only have experienced through that poet's eyes." □



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Konica

☐ Hot on the heels of last month's discussion of the Nimslo stereo camera comes another announcement of interest to stereo buffs. A few weeks after Jerry Nims and Allen Lo announced the formation of Diversified Development Corporation to bring their four-lensed 3-D camera to market, Stelux Manufacturing of Hong Kong announced its intention to join the battle with a roll-film version of its Steriflex 3-D camera for the amateur market.

A completely different system from that used by the Nimslo, the Steriflex uses a single motorized lens and a moving lenticular (corrugated plastic) screen in front of the film. When a picture is taken, the lens aperture and lenticular screen both move horizontally. Since they track in precise alignment, several predetermined angles of the subject are recorded on the film. The resulting negative or transparency has a diffused appearance when processed, but once it is bonded to a second lenticular screen, the image becomes both sharp and multidimensional.

Taken together, the expenditure by these two companies to develop rival 3-D systems exceeds \$10 million. Interestingly enough, neither company is oriented to the consumer photo market. Can either one popularize 3-D photography sufficiently to recoup its investment? We'll have to wait for the answer, but it seems unlikely to this observer. As I see it, only Kodak has the vertical integration and market penetration necessary to reintroduce stereo to the photographic public and give it enough of a mass-market appeal to succeed. But since none of Kodak's previous ventures into stereo photography have really been moneymakers, I can't see them giving stereo top priority at this time—they're far too busy with instant photography and the matter of turning a profit at it. History has proven that the more photography is simplified, the more popular it becomes. Since neither the Nimslo nor the Stelux approach to 3-D is simple (or inexpensive), it's anyone's guess whether they'll become household words or simply another pair of expensive 3-D artifacts.

On a lighter note, I do have good news to report to all stereo fans. A few weeks ago I had the good fortune to encounter a fairly new publication called *Reel 3-D News*. Published 11 times yearly, this 12-page newsletter is bulging at its seams with news of interest to all collectors and lovers of stereo photography. For you nostalgia fans, vintage ads for stereo equipment of the 1950's are often reprinted. While this alone

VINTAGE VIEWFINDER

KALTON C. LAHUE

MORE ON STEREO'S PRESENT—AND PAST

would be worth the modest price asked, what really caught my eye was the "Reely Classified" section, where stereo fans of all formats can indulge in buy-and-sell activities.

Reel 3-D News is only one year old, which explains why many of you have never heard of it. But in that short time it has made a firm impression on its readers by providing in-depth articles on the Busch Verascope F-40, the View-Master Personal, beam-splitting (mirror/prism) systems, 3-D films of the past five years,

Compto, TDC and View-Master projector out in plain view. They mount their own slides in glass, so you know that they *live* their hobby!

This attitude goes a long way toward explaining the high quality of their publication. While neither is in the publishing business for the money, both would like to see *Reel 3-D News* grow and prosper, since it has proven to be an ideal way to meet new friends who share interests in common with theirs—stereo photography! In only one short year their hobby has already taken on an international flavor, with subscriptions flowing in from such faraway places as Canada, Denmark, England, Holland, Sweden, Belgium and Germany.

David keeps busy as vice-president of a Beverly Hills real estate development company, while Susan is involved in apartment house management. But in their spare time you'll find them prowling the countryside



Susan and David examine a copy of their latest issue before mailing it out to subscribers. (Photo courtesy of Reel 3-D Enterprises.)

mounting techniques and supplies currently available, and a comprehensive guide to stereo equipment of the 1950's.

Naturally snoop, I made a few phone calls and soon established that this labor of love was the handiwork of a young Los Angeles couple, Susan Pinsky and David Starkman. Like many of us, these two were hooked at a garage sale—they bought a number of old View-Master reels and a viewer. You know how that story goes, so you won't be surprised to learn that between them Susan and David own a Realist, Wollensak, Verascope, TDC Vivid, two Personals—should I go on? Their apartment is permanently decorated with a Kodak Ektalite screen, and you'll almost always find at least a

with at least four to six cameras between them. And when they're not shooting in stereo, they're researching new topics of interest for their publication.

Whether you're a 3-D addict or just interested in learning more about the "twin windows on the world," you won't find *Reel 3-D News* at the corner newsstand. But you can subscribe by sending \$12 to Reel 3-D Enterprises, P.O. Box 67486, Los Angeles, California 90067. You'll get 11 issues of the most refreshing photo publication since *Shutterbug Ads*, and a trip into the past, present and future of stereo photography. Only organization will prove to the photo industry that 3-D is worth their attention—and you won't find a better banner to organize around. ☐

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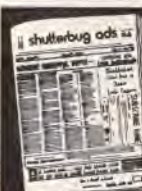
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☐ "I am an amateur photographer and a regular reader of your excellent magazine. At present I have a problem that concerns producing photo images on china and glass. I have seen no books on this process over here. Do you know of any well-illustrated books on this type of process? Also, do you know of any firms that supply the chemicals?"—J.V. Moseley, London, England.

I recently came across a book that seems custom-tailored to your request. The book is entitled *Alternative Photographic Processes*, written by Kent E. Wade (published by Morgan & Morgan, Inc., Dobbs Ferry, New York 10522), and it is a truly ambitious work that is unusually extensive and complete in the variety of photographic processes described. Among the techniques covered are how to create photographic images on glass, wood, metal, fabric, stone, plastic and leather.

Intended to be used as a reference handbook as well as teaching guide, the volume is encyclopedic in its scope. Further, it combines many of the crafts' disciplines with serious photography for some unexpected and totally unique results. In addition to chapters on photographic images on nonphotographic surfaces, the book also includes chapters on nonsilver-printing processes; bleaching, hand-coloring and dyeing the black-and-white photograph; photo-silkscreen techniques; and other complex imaging systems including holography and Kirlian photography. The book also includes a section on the safe handling of dangerous chemicals as well as a list of suppliers, tools and equipment, plus an extensive bibliography.

"Could you briefly describe the collodion process of making prints?"—John Foster, Cape May, New Jersey.

Collodion "prints" were actually glass plates that were coated with collodion, a highly flammable solution of nitrated cellulose that served as a base for the sensitizing material and subsequent image. The process, discovered by Frederick Scott Archer in 1851, required that the entire process—from coating through sensitization, exposure, development and fixation—be carried out in rapid sequence to prevent deterioration of the sensitive material. The plate, which was made sensitive by immersion in silver nitrate solution, was exposed and immediately developed in pyrogallol acid and then made permanent by fixation in hyposulphite or potassium cyanide.

The process, although uncom-

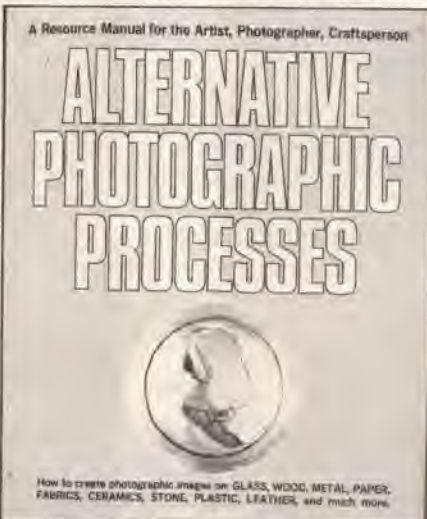
ONE TO ONE BILL HURTER

ALTERNATE ROUTES

plicated, was both hazardous and burdensome due to the volatile chemicals and the need to be in close proximity to a darkroom.

For more information, consult either *The Focal Encyclopedia of Photography*, McGraw-Hill Book Company, New York, New York, or *A Concise History of Photography*, Thames and Hudson, London, England.

"Is there an easy way to open 35mm cartridges when the film has inadvertently rolled back into the



cassette? My pocket-knife technique leaves holes in the top of the table, plus I experience the trauma of never knowing if this will be the time I slip and puncture a finger. Is there a patented remover or crimper specifically made for opening film cartridges?"—Nick Kobernik, Glendale, Oregon.

As far as I know, there are a few such devices around, but I have always found that a simple combination can and bottle opener is the best thing in the world for safely and quickly opening film cassettes. You can use either end of the opener on a film cassette—the can-opener end (pointed end) is used on the raised end of the cartridge where the spindle protrudes, and the bottle opener end is used on the flat side of the cassette. These openers are simple to use in the dark, and if you hang one on a string in a convenient location, it will be easy to locate in the dark. The best feature is that they generally don't cost more than a

quarter.

You can also use the type of bottle opener you see mounted on coolers or behind bars. They can be attached to any vertical surface with screws and are quite simple to use. You simply pop the cap of the cassette the same way you remove a bottle cap off of a cool one.

"I would greatly appreciate any of your suggestions regarding the making of archival black-and-white prints. I am especially interested in the properties of Kodak Print Flattening Solution and whether or not it affects archival quality."—Peter Kresan, Tucson, Arizona.

Any print that is properly fixed and washed should have archival permanence and, theoretically, should last for 100 years. Proper fixation means the removal of all unused silver salts still present in the print emulsion after development. For the highest degree of print permanence, a two-bath fix is used. The first bath does the bulk of the fixing and is exhausted rather quickly in comparison with the second bath, which removes any traces of remaining silver salts. Never use the same fixing bath that you use for film for your prints, as film fixer may contain a high proportion of silver salts, which may become deposited on the paper base and will in time discolor the print.

Even the most thorough print washing will still leave minute traces of silver salts and hypo in the print. Although the residual chemicals remain primarily in the base of the print, a double-weight print may have absorbed enough chemistry to endanger its permanence. The most efficient system is to use a hypo-eliminating agent, which renders the remaining hypo and silver salts as neutral, and thus harmless, salts.

Regarding your question on Kodak Print Flattening Solution, according to the Corporate Information Department at Eastman Kodak, the properties of this solution will have absolutely no effect on the archival permanence of black-and-white prints.

One added measure that will ensure 100-year archival permanence is a toning in either gold-chloride or selenium protective toners. These baths protect the print surface from outside elements such as dust and pollution and are particularly useful if the print is to be displayed.

For more information on permanence and suggested techniques, consult: *Basic Photography*, by M. J. Langford, Amphoto, New York, New York, or *The Big Book of Photography*, by Kalton C. Lahue, Petersen Publishing Company, Los Angeles, California. □

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